

News in brief

Middlesex comes first in league

Students from Middlesex Polytechnic gained more first class honours degrees this year than from any other polytechnic, according to the Committee of Directors of Polytechnics.

This is the second year a league table supplement has been included in the CDP's twice yearly publication *Form on Polytechnics*. Middlesex comes top with 65 first class honours degrees, and the highest number of firsts in European business administration and civil engineering. Mature students account for a third of the firsts.

Close on its heels was Manchester Polytechnic with 60 first class degrees. Portsmouth (48) and Leicester (46). The supplement will be circulated in the new year.

Private thoughts

The Prime Minister has refused to provide a copy of the Think Tank report on welfare state financing, which included proposals to privatize higher education, to the House of Commons Select Committee on Education, Science and Arts.

In a letter to committee chairman Mr Christopher Price MP she writes: "I have considered whether the paper should be made available to the committee but I have concluded that it should not."

Credit swapshop

The Open University has won a £900,000 contract over three years to develop and run a pilot credit transfer project in south-west England for the Department of Education and Science.

The Educational Counselling and Credit Transfer Information Service will be directed by Mr Peter Frogbrook, current manager of operational services at the OU's academic computing services.

Balliol's appeal

Balliol has launched a £2m appeal, to pay for a new building, exactly 700 years after the Oxford college's first statutes were sealed by Devoignilla, the widow of John De Balliol. The money will also go to modernize facilities, endow some existing endowed fellowships. In addition it will create four scholarships for overseas students.

Democratic choice

Ms Sue Slipman, former president of the National Union of Students, has been adopted as the prospective parliamentary candidate for the Social Democratic Party in Basildon, Essex. Ms Slipman, a former member of the Communist Party's national executive, is now a field officer for the National Union of Public Employees.

Nursery tales

Edinburgh University students are to lobby Monday's court meeting which is likely to cut funds for the day nursery. The nursery, with a staff of around ten, has 52 full-time places.

More adult education at Southampton?

Southampton University should create an institute of adult and continuing education to coordinate and draw on the academic resources of the whole university, says the university's adult education department.

In a paper for the senate, the department argues that the organization of continuing education - with its own extra-curricular provision in numerous subjects, and other facilities providing subject-based courses is inefficient.

Where decisions as to who and what to teach are made by a subject-based department inter-disciplinary courses and classes of mixed students are likely to suffer says the paper. And financial resources cannot be pooled to support non-profitable courses with profitable ones.

"When the concern was only for traditional work or when there was

Grant level means cuts at OU

by Karen Gold

The Open University started talking about retrenchment and cuts this week after the Government decided to put up its direct grant by less than 3 per cent. This is although its assumed income from tuition fees will rise in line with inflation.

The university has mounted a sustained campaign against an increase in undergraduate student fees, whose level is assumed though not dictated by the Government each year, following a series of substantial increases - 20 per cent last year alone - and an equally substantial increase in the number of potential students declining places offered to them and giving cost as their reason.

So vice chancellor Dr John Horlock gave a grudging welcome to the announcement of an assumed fee rise

of 5.8 per cent - from £120 to £127 - for 1983, by Mr William Waldegrave, under secretary for higher education, in a Commons written answer this week.

He said: "We very much regret any rise in tuition fees, but are slightly relieved that this year's increase does not exceed inflation." But to the news that the university's grant - which comprises over 90 per cent of its income for undergraduate courses, compared with fees which comprise around five per cent - was to rise 2.97 per cent, from £53.8m to £55.4m, Dr Horlock said: "This means a significant drop in our existing activities, with probable implications for our academic course profile."

"We are now discussing what curtailment in OU activities might have to be made." One possibility under-

stood to be under discussion was the postponement of a number of courses. But the OU said that the assumed fee levels would not be increased to meet the deficiency.

For the first time, the Government has given the university an indication of its future assumed fee level, to give the OU greater flexibility in planning and students clearer knowledge of their commitment. The figure indicated for 1984 fees is £133, a 4.7 per cent increase on the 1983 level, but with no indication of the accompanying grant.

The 1983 grant also includes £500,000 to continue the scheme which began last year to subsidize unemployed people by charging them only £10 for an undergraduate course and greatly reduced fees for other courses.

Labour plan could mean two million more students

by Paul Flather

Labour's plans to provide a "universal entitlement" of a year's full-time education to everyone over the age of 18 could add between 1.3 and 2 million to the 500,000 currently in full-time education.

The figures were given this week by the party's education spokesman on the publication of Labour's much leaked policy document on post-18 education, described as "a radical approach to education throughout life for all the community."

Although the document is for discussion, all the main principles were accepted in a motion at Labour's last national conference, and can be regarded as official party policy. Mr Neil Kinnock, the education spokesman, said he was confident they would be included in Labour's manifesto.

While there are few changes from the draft leaked in August, the section dealing with Oxbridge has been toned down.

The document now stresses that while "some critics" have gone as far as describing Oxbridge as a "major cancer", the party "does not necessarily endorse all these criticisms". It also recognizes that in recent years Oxbridge has experimented with different methods to improve its maintained sector intake.

The party acknowledges that the cost of entitlement will be "substantial", but declined to produce figures on the grounds that they would be misleading. Mr Phillip Whitehead, the party's higher education spokesman, challenged critics to say "what it will cost not to do it."

Costs, Labour says, have to be offset against benefits in terms of an increasingly productive workforce, adaptation to needs and skills of technological change, and greater social justice. There would also be a drastic shift in the "spending imbalance" between defence and education. A new educational insurance fund and a new payroll tax are discussed, but student loans and study mortgages are on balance rejected.

A national survey published last week by the Advisory Council for Adult and Continuing Education, a strong supporter of entitlement, was widely quoted to back the policy. The survey showed 88 per cent of the population approved the idea, with 50 per cent likely and 22 per cent very likely to take it up.

Labour estimates, on the basis of the survey and foreign data that take-up averages about 10 per cent, that between 1.3 million and 2 million more people a year would enter full-time education say in 1993, once the scheme was in full swing.

Changes would be made in two stages, first extending both paid education leave and assisted education leave, followed by new statutory rights. Mandatory awards for non-advanced and adult courses would be introduced.

**Expansion after 18: Expansion with Change, £1.25 from The Labour Party, 150 Watworth Road, London SE17 1JT.*



St Andrew's day was celebrated by St Andrews University's department of astronomy and astrophysics with a 14 km "city to surf" run. The run, started by television personality and astronomer Patrick Moore, was organized by

Professor D. W. N. Stilbs (centre), head of astronomy and astrophysics, who this summer participated in the City to Surf run held annually in Sydney as a member of the Anglo-Australian Observatory team.

Efficiency studies upset college lecturers' union

by Sarah Bayliss

Lecturers' leaders will express growing disquiet about Government auditors carrying out efficiency studies on colleges when they meet for talks next week.

Executive members of the National Association of Teachers in Further and Higher Education are expected to challenge recent criticisms of college management and working hours when they meet senior members of the local government audit service in Bristol.

Next Tuesday's meeting is the first time both sides have met since district auditors began commenting on college work in terms of cost-effectiveness and efficiency. Over the last two years, lecturers' teaching hours, student registers and staff-student ratios have come under increasing scrutiny from auditors around the country.

Mr Mike Farmer, an executive member of Nafhe and chairman of the union's working party on the audit service, said: "We are most anxious to ensure that crude measures of efficiency are not the only things used to assess how good a college is."

He was worried that the auditors' approach seemed to assess further education like an industry, in terms of the balance between "input" (lecturers' hours) and "output" (registered students).

Earlier this year Mr Peter Kimance, the chief inspector of audit, reported that some college lecturers in further education were teaching for less than half their contracted working hours.

A detailed investigation of management control at 30 colleges in 12 local education authorities found lecturers teaching between 13 and 22 hours a week, much less than the contracted working week of 30 hours.

Nafhe is particularly aware that the spotlight on lecturers' hours has prompted several authorities to look for savings in that area.

In Manchester this summer for example, 600 lecturers were dismissed and offered new contracts of employment which embodied maximum class contact hours in an effort to save £400,000. The Labour-controlled authority backed down in the face of a major dispute but instigated a cost-saving exercise with the co-operation of Nafhe. (TES).

Cool reception for secondment

Attempts to whip up enthusiasm for transfer of staff between industry and higher education will meet a cool response from candidates for secondment on either side, to judge from the results of a survey for the Chemical Industry Training Board.

The study, which covered 30 chemistry and chemical engineering departments in universities and polytechnics and 16 employers found that heads of department and senior industrial employees, as well as the professional institutions were keen on academics spending time in industry and on industrialists moving over to higher education.

But junior staff in both sectors were lukewarm about the idea. Academic staff believed that publication of research work was a sure route to promotion, and some young industry employees even felt that academic secondments could be detrimental to their prospects.

When secondments were arranged, there were also difficulties finding fruitful placements. Employers indicated that visiting academics were likely to find themselves working in research or personnel departments.

Similarly, it was hard to find anywhere but the laboratory for industrialists in higher education.

Library reduces bookbuying

Lack of funds has forced the British Library to reduce bookbuying and also plans to eradicate the backlog of conservation work which should have been completed by the end of the century.

The library says in its annual report, published this week, that it has been compelled to take these measures despite an increase in grant-in-aid for 1982/83 and attempts to increase revenue.

The report says that curtailing of acquisitions is particularly visible in the actual figures for books received. It was compensated for by a 25 per cent increase in books obtained through deposit.

During 1981/82 the lending division of the British Library spent slightly more (£2.3m) than in the

Library reduces bookbuying

previous year, but the report says that in real terms this represented a significant cut.

This led to cancelled subscriptions for popular and recreational periodicals, trade and business periodicals and Cyrillic periodicals. It also meant it bought fewer "lower level" monographs, secondhand serials, microform research collections, as well as music and report literature.

The division points out that this reduction has had no effect on the proportion of requests met from stock, only because it takes two or three years to feel the effect of cuts on demand.

The library stresses that whatever economies are made expedients adopted, the Government must increase its grant. Otherwise the library's deficit will continue.

MSC nomination annoys unions

by Patricia Santinelli

Higher education organizations are annoyed over Sir Keith Joseph's decision to give the choice for the education secretary to the Manpower Services Commission.

The National Association of Teachers in Further and Higher Education, the Association of Colleges in Further and Higher Education and the Association of Principals of Colleges all nominated Mr Derek Longden, principal of Bedford College for Higher Education.

They have been told unofficially that Sir Keith Joseph, Secretary of State for Education, has chosen Mr Longden, vice principal of Bedford College in Luton. The appointment is to be announced next week, when the nomination has gone to the Secretary of State for Employment and the Prime Minister.

The current holder, Mr Roy Helmer, who is principal of Cambridgeshire College of Art and Technology, is to leave the MSC seat at the end of December.

The three associations which were consulted by the Department of Education and Science in September say this is a blatant political move which can only harm the carefully built up relationship between the MSC and educational interests.

Mr Mick Farley, assistant further education secretary at Nafhe, says it confirms the political overtones of a DES letter in which their advice was sought. It said that "candidates for the seat would be expected to be sympathetic to the aims of the Government and objectives of the commission in terms of labour market and training policies."

He added that the appointment "makes nonsense of the penalties sentence of that letter which said the candidate's job should in-

clude the maintenance of liaison with various education interests". "Since Mr Longden is not out of the running, he is unlikely to have the confidence of educational interests. It will surely undermine the trust that has been built up by Roy Helmer between education and the commission," Mr Farley said.

He added that if both secretaries of state were bent on a political appointment, then there were others with better track records than Mr Longden's.

Dr George Tolley, chairman of the ACFHE says that the decision to ignore their nomination does not bode well for future cooperation with the education service, nor does it ensure that the educational representatives on the commission can truly speak on behalf of educational interests.

Mr Len Street, president of the APC says the appointment will upset the commission's balance. "Mr Longden, if his is seen as a political appointment, will find it very hard to reconcile all the different interests on the MSC."

He adds that Mr Longden will be in a weak position since, unlike their nominee, he will not have the collective support and confidence of the education service, nor access to the consultative machinery providing back up information.

The Socialists Educational Association is calling on Labour-controlled authorities to refuse to make bids for the MSC new initiative in technical vocational education for 14 to 18-year-old students.

The SEA says the scheme will destroy comprehensive schooling and that each trade union and the Trades Union Congress should consider whether to end involvement in the work of the MSC.

AUT goes into battle in Ulster

The Association of Polytechnic Teachers has entered the controversy over the naming of Ulster's polytechnic in a letter to *The Times* this week.

Chairman Mr Joe Powell criticized the proposal of one of the seven working parties to adopt the name "The University of Ulster".

He wrote: "The merger in Ulster between a large and successful polytechnic... and a smaller and weaker university. Yet the proposed name of 'university' for the title, to the exclusion of 'polytechnic', suggests that Her Majesty's Government has the ultimate destination of all successful higher education institutions as universities."

Mr Powell proposes the title "polytechnic university" instead. But the academic board meeting of the Ulster Polytechnic recently, an informal vote showed a sizeable majority among academic staff for the university title.

The vice-chancellor of Queens' University, Dr Peter Froggatt, has already written to the chairman of the steering group overseeing the merger, Sir Peter Swinnerton-Dyer, protesting that the name will cause confusion. The two are understood to have discussed it in an informal meeting this week.

AUT uses law to force open books

The Association of University Teachers is seeking an order from the Central Arbitration Committee under employment protection legislation to force Aston University to open its accounts.

The union wants a firm of accountants to examine Aston's finances as part of its fight against compulsory redundancies. The dispute over Aston's books is being referred to CAC after joint negotiating meeting between the two sides last week failed to resolve it.

The AUT is fighting the university on three fronts. A High Court writ was issued last week seeking a declaration that the vote by the university's council for compulsory redundancy was a breach of Aston's charter and the union is organizing a campaign lobby of an Aston council meeting on December 14.

Mr Laurie Sapper, AUT president said that delegations of around 30 people from practically every university in the country would be protesting against the sackings.

While at least six representatives are expected from each Scottish university, a delegation of around 30 is expected from Aberdeen which successfully opposed compulsory redundancy moves earlier this year.

College may lose autonomy after all

The City of Liverpool College may lose its autonomy after a resolution passed by the City Council in 1983 if a resolution passed by the city's policy and finance committee is adopted by the full council meeting.

The resolution put forward by Sir Trevor Jones, leader of the council and chairman of the policy and finance committee at a meeting this week, was passed with his casting vote.

This is the third time that the future of COLCHE as an independent institution has been threatened in a few months.

The first was when it appeared on the Department of Education and Science's list of institutions which were to cease teaching training. The second was when the Secretary of State for Education repealed two

thirds of the courses but said they should go to the polytechnic.

Following this a paper suggesting the amalgamation of the college and the abandonment of the COLCHE site was put forward by the city's director of education. It was debated at a meeting of the education committee but a resolution based on its contents was defeated by Labour councillors.

Instead a Labour group amendment was carried by 18 votes to 15. This asked for the removal of the embargo on recruitment and a study of both the financial implications if of both the merger and of the effect there is no merger and of the effect of a merger on employment in the area and recruitment of students.

Some of these points are included in the policy and finance committee's

New hurdle threatens Welsh merger

by Sandra Hempel

The troubled merger between University College, Cardiff, and the University of Wales Institute of Science and Technology has hit a new setback which could jeopardise the whole plan.

The institute's council this week backed the senate and stated it saw little possibility of finding acceptable merger terms in the near future. It demanded a halt to talks on the new charter and statutes until four areas of concern have been resolved to UWIST's satisfaction.

The institute's concerns are: that no buildings plan has been agreed; that there are doubts about finances; that the distribution of academic resources has not been settled; that staff have been given no assurances about their personal positions in any new administration.

The unrest stems from a feeling that University College is trying to swallow up the smaller institution and that more sacrifices will be demanded from UWIST.

The UWIST members of the joint planning committee on the merger were particularly angry about a recent letter from University College's principal Dr C. W. L. Bean to the University Grants Committee. This, they claim, contained proposals about a new science building not discussed with them.

There was a major row between the two institutions last summer over University College's financial position. UCC accused the institute of falsely claiming that University College would be more than £2m in the red by 1983/84, and said it would have a £400,000 deficit at the worst.

Some members of UWIST see the present problems as the beginning of the end of the merger plan, while others regard it as a negotiating tactic aimed at forcing UCC to take a less arrogant stance.

The timetable for the new charter has already been put back a year to August 1985 and it was planned to send a draft petition, charter and statute to the Privy Council for com-

ment by mid-January. UWIST's registrar, Mr Frank Harris-Jones, said: "Senate is not happy about the way things have gone. It is felt that if there is to be so much disturbance then it should result in a bigger and better institution. The negotiations over the charter seem to have gone galloping ahead leaving questions of resources and academic considerations to catch up." The future of any merger talks now depends on UCC's attitude, Mr Harris-Jones said.

Ms Joan Wright, president of UWIST's Association of University Teachers said the union was neither for nor against the merger, but it was worried that there might be commitment to one before many areas of concern had been settled.

Dr Alfred Moritz, vice principal and registrar of University College said this week: "We are disturbed by this unexpected development and must reserve our considered comments until there has been time for reflection."

Teaching partnership strengthened

by Bert Lodge

Professional committees, set up in 1975 to monitor teacher training following the abolition of the area training organizations, are to be reformed and strengthened.

Mrs Pauline Perry, chief HMI for teacher training, told a conference of teacher trainers last Saturday arranged by the Society for Research into Higher Education that reform of the committees would be a big step towards establishing a genuine partnership between education lecturers and school teachers.

She said: "A partnership means as equals. It means job-sharing and using teachers in the assessment of students. I would like to see courses planned by a joint partnership of lecturers, teachers and local authority officers."

Mrs Perry said afterwards that an announcement about the committees would be made in the New Year. Universities and other providing bodies were advised to set up the committees to include teachers, as an interim measure to inspect in-service and initial training in their area. In practice many of the committees are virtually moribund.

Dr Clifford Butler, vice chancellor of Loughborough University and chairman of the Advisory Committee on the Supply and Education of Teachers, told the conference he would like to see the committees become accredited bodies examining the programmes of institutions.

He thought the induction of teachers had not been a success. "This is partly because they have professional status before they start. In engineering a certificate of experience has to be gained before they get chartered status."

Professor Ted Wragg, director of the Exeter University school of education, was mistrustful of the current preoccupation of education ministers with teacher training. "This interest is bizarre, mercurial, quixotic, crazed," he said.

The Government is to allocate local education authorities over £4m in in-service training grants designed to support four priority areas in the next financial year, it announced this week. The grants should benefit some 3,000 teachers.

The four priority areas are management training for heads and other senior teachers and mathematics teaching on which two thirds of the funding will go. The remainder is to spend on pre-vocational education in schools and special educational needs in ordinary schools.

In addition, six universities and one college of higher education have been asked to put in bids for a housing and staffing national centre to develop management training for head teachers and senior staff in schools.

The seven institutions are Bristol, Oxford, London, Birmingham York universities the Open University and Bulmershe College, Reading. Other interested institutions are also welcome to submit bids by January 31.



Honorary degrees row

Students at Lancaster University have accused it of withdrawing a decision to grant an honorary degree to Nelson Mandela, the banned black South African leader. Mr Kevan Collins, the student union president, said Mr Mandela's name had been included in the list of honorary degrees drawn up earlier this year, but was withdrawn suddenly following pressure from the Foreign Office.

A university spokesman denied there had been any outside interference and said the senate had decided on the list some time ago. He refused to say if Mr Mandela's name was on the early shortlist.

The students claim they first heard of Mr Mandela's exclusion from the awards list shortly before last week's degree ceremony. Princess Alexandra, who made the awards, is pictured (above) greeting police inspectors from the Royal Hong Kong Police during her visit to Lancaster.

Heriot-Watt to cut intake

Heriot-Watt University is to cut its undergraduate intake next session by 23 per cent in order to achieve the target set by the University Grants Committee.

The university had to cut 235 places out of its 2,385 over two years, but overshot this session's target by 60. This year's intake of 704 will be cut next session to 542.

Science will be the worst hit, losing

virtually 100 places, while engineering will lose 50. It is likely that prospective students for the most heavily over-subscribed course, electrical and electronic engineering, will have to have at least three passes at higher level. This session the course had 800 applications for 50 places.

The university said: "As intake and applications continue to come in, standards of entry automatically rise."

'New blood' disagreement

continued from front page

Another disagreement at present is how much concentration there should be in particular high-profile subjects. Ministers are anxious that the money for "new blood" should be concentrated in a few areas. The research councils, on the other hand, see the "new blood" scheme as an opportunity to restore a sound base for scholarly and scientific work across a broad range of disciplines.

Under the plan at present envisaged the research councils would play a leading role in the distribution of these new posts, but the University Grants Committee would assume long-term financial responsibility.

New president's fair deal plan

by Felicity Jones

A seven-point plan which would enable the binary system of higher education to evolve for the benefit of all participants was outlined by Dr Harry Law, president of Portsmouth Polytechnic in his inaugural lecture last week.

His points were:

- One. More equitable funding could be achieved through a national formula-based approach to funding for both universities and polytechnics.
- Dual funding should be extended to the public sector or research funds should be allocated centrally to both sectors.
- Two. The 1983/84 expenditure plans just announced by the Government "perpetuated the present difficulties". Although public sector higher education would be receiving £1.1m extra, the polytechnic share would fall by 3 per cent while universities would be £40m better off.
- Three. There should be a national planning mechanism for all higher education which could coordinate the provision across the binary line. This function could be carried out by the

National Advisory Body or its successor.

The danger of the present dichotomous planning was illustrated by the speed with which universities had been able to implement the Fimiston-led four-year engineering degree-courses, while, within the "battery of controls" under which polytechnics operated, it seemed unlikely such courses would start even in 1983, putting the status of public sector engineering departments at stake.

Four. Dr Law wanted to see validating arrangements evolved so that greater recognition was given to the mature institutions. "External validation is expensive and it is also a relatively slow process, giving rise to criticisms that public sector institutions take longer to respond to change than the universities," said Dr Law.

Five. A form of Royal Charter should be devised for certain mature institutions which could be achieved without interfering with the local authority relationship and the polytechnic role in the public sector.

Dr Law saw nothing wrong with

the idea of a public sector university. "Isn't it time to recognize that forced conformity to a narrow model and inappropriate management restrictions could lead eventually to the impoverishment of the sector?" he asked.

Six. There should be an admissions clearing house at least to cover polytechnic degree courses. As chairman of a Committee of Directors of Polytechnic's working party into this matter, he hoped it would be introduced in time for 1985 admissions.

Seven. The hindrance to finance-raising from external funding within the public sector due to the restrictions imposed by the Local Government Act should be lifted. Dr Law pointed to the University Grants Committee assurance that additional income would not lead to a reduction in grant, a guarantee which is not permitted by law to polytechnics.

Short of a revision of the legislation, Dr Law thought the incorporation of memorandum of association of polytechnics as limited companies could help overcome the constraints.

Leader, back page

CND link opponent bids for national office

by David Jobbins

A leading opponent of the college lecturers' union's affiliation to the Campaign for Nuclear Disarmament is to make it the key issue in his campaign to become next year's vice president.

Mr Bill Hoad, of Birmingham Polytechnic, was one of several prominent members of the National Association of Teachers in Further and Higher Education who sought a special conference held last weekend.

They wanted the conference to authorize a postal ballot to overturn the decision made at last May's annual conference to affiliate to the CND and change the union's rules to make it legally possible.

Mr Hoad announced his decision to stand after the special conference, requisitioned by 9,000 members, rejected the demand for a postal ballot.

Instead, delegates overwhelmingly supported the compromise formula put forward by the national executive. This laid down a consultation procedure which the union's 800 branches must follow early next year to prepare for the expected debate at the annual conference next May.

After the vote Mr Hoad said he regretted the decision and appealed to members who might be considering resignation not to do so. About 500 of the union's 75,000 members have threatened to resign. Opponents of CND affiliation, including the vice president, Mr Cecil Robinson, claim that thousands more may simply allow their subscriptions to

lapse if the decisions are not reversed.

Most executive members are taking comfort, however, from new figures which show that the union's membership is growing - 3,329 up in the year ending October 1982. Applications this term are 36 per cent up on the same term last year.

Mr Hoad, Mr Robinson, past president Dr Peter Knight and others who opposed affiliation now hope that members who share their view will attend branch meetings and make their opinions known.

But it seems very unlikely that next year's conference will overturn the decision.

Mr M. Holst from the union's south-western region, opposed the executive proposals and said they "added insult to injury". They were nothing but a trick because only a two-thirds majority could overturn the decision at the conference.

Mr Ray Grace, who spoke for the executive, accused ballot supporters of trying to change the rules of the game because they did not like the result. "To me and to many other committed trade unionists, a postal ballot is as decisive to trade unionists as the issue of CND," he said.

Mr Norman Egan, from the north-west, claimed that a postal ballot offered a chance to retain members who would otherwise be lost to other unions. But Mr Peter Dawson, the general secretary, said the union had a democratic policymaking structure in its branches. He appealed to delegates to ensure maximum attendance at the meetings and to encourage full discussion and consultation.

College lecturers press for mixed pay package increase

College lecturers are to seek a mixed percentage and flat rate salary increase for the second year running.

Natfhe's special weekend conference decided to press a claim for a £280 lump sum to aid the lower paid and a percentage increase in line with other public sector claims. Moves for a total flat rate increase and for a larger lump sum element were defeated convincingly.

An amendment placing an "absolute priority" on the claim for automatic transfer from the lecturer 1 to the lecturer 2 grade was carried by 195 votes to 171, and defeated the executive.

The union is also seeking an extra point at the top of the senior lecturer scale in a step towards its long-term objective to achieve parity between

public sector higher education lecturers and their counterparts in the universities.

Mr John Baillie, speaking for the national executive, warned against creating the impression that the Government's 3.5 per cent cash limit guaranteed an award to college lecturers of at least this amount. "Within the global sum some people are being offered nothing at all. There is no guarantee we would not be among that order," he said.

Last year Natfhe claimed 12 per cent and a £250 lump sum payment. This year's lump sum is designed to increase last year's in line with expected inflation. The eventual settlement averaged 5.8 per cent and included a £69 lump sum.

Medical student group set up

The British Medical Association's new associate members committee will have careers advice, student assistantships and private patients high on its agenda at its first formal meeting in January.

The Associate Students Group, from which the committee is drawn, has already run into criticism for being unrepresentative. Although the group was set up by the BMA as a

national body for medical students, it is restricted to associate members of the BMA, who make up only around a third of all medical students.

The informal meeting which launched the new group decided that each medical school would be entitled to one representative on the committee, in spite of fears that this would give undue weight to the London schools.

Sour grapes over cost-cuts planning

Student leaders are angry that their colleges have been excluded from the hypothetical cost-cutting plan which the National Advisory Body asked polytechnics and colleges to draw up.

They claim that many institutions are pressing ahead with procedures which do not permit student unions to put forward their views.

The National Union of Students conference in Margate last weekend, drew out a demand to abolish the NAB but firmly supported a campaign of non-cooperation with its 10 per cent cost-cutting exercise.

Mr Tommy Sheppard, the NUS vice president for education, claimed as proof that the institutions' attitude was in breach of the expressed wish of the NAB's secretary, Mr John Bevan, the students should be excluded.

The conference voted for a 24-hour occupation - probably some time next February - to protest against the cuts in both the public and university sectors.

Manchester Polytechnic students have already been in occupation for more than two weeks in opposition to hypothetical cuts put forward by its director Mr Kenneth Green.

The conference also called for a "general right of access to continuing education with a one-year limit on entitlement, broadly in line with the Labour Party's newly-expressed policy. It called on its leaders to liaise with all political parties to secure commitment in manifestos on education and grants policies.

As part of a demand for wider access to post-school education, the conference backed a demand from Oxford University for a Royal Commission to investigate Oxbridge admissions procedures.

Mr Duncan Bruck, from Hertford College, Oxford, said that Oxbridge's large resources were not available to all on grounds of ability. This was because the universities used their own entrance examinations rather than admitting students through the Universities Central Council on Admissions.

Changes designed to admit more state school students were fine in principle "but in practice the colleges only do it because they hope to cream off the best of the comprehensive people", he added.

A Royal Commission was needed "to kick the colleges into reforming their entrance systems" and to break down the "most reactionary educational establishment in the country", Mr Bruck said.

The conference also demanded an end to all fee-paying primary, secondary and special education. Mr Patrick Clements, from Barrow College of Further Education, attacked private education as a cancer of the education system. But Mr Bernard Smith, a Conservative member of the NUS part-time students committee, asked:

"If Labour is so committed to ending private education why do so many of its leaders send their children to private schools?"

Affirming NUS opposition to student loans Ms Sarah Veale vice president for welfare, pointed out how many students were dependent on the parental contribution. She commented: "We do not want students to become indebted to their parents."

The NUS president Mr Neil Stewart said: "We have rights to be independent adults, and to have the finance to make that a reality."

Tory backbencher speaks out against loans



Sir William: unconvinced by loans

Student loans would increase public spending, cause the establishment of a whole new bureaucracy and place a harsh financial burden on graduates, Sir William Van Straubenzee, chairman of the Conservative backbench education committee claimed last week.

Sir William was addressing Tory students at Newcastle University on the first day of the National Union of Students conference in Margate, where he was an official visitor. He urged Conservatives to think carefully before committing themselves to loans.

"I have a feeling that second thoughts should prevail and we should recognize that we have a pretty efficient system in this country of student support which is widely based socially and which should be tampered with only if we are absolutely certain the alternative is better," he said. "I remain to be convinced," he added.

Glib assumptions that the banks would administer the loans independently were mistaken, he said. Each loan would have to be guaranteed by the Treasury thus increasing, not decreasing, government spending.

Bureaucratic loans boards, either local or national, would have to be set up for collection and still might not ensure that students fulfilled their obligations.

The question also remained as to whether the loans would bear an economic rate of interest. If they did, they would represent a harsh burden on the graduates of the future. Otherwise, students would be offered specially privileged rates of interest and would be encouraged to borrow up to the hilt.

There was also a need for more knowledge in society. Changes in the life sciences for example meant it was essential for people drawn into higher education to be able to deal with the questions raised, he said.

"I would like to feel that we were moving into a more participating society where the number of people involved in decision-making is greater and where there is a feeling of participation of a stronger kind than there is in contemporary society," Lord Briggs commented.

New ways had to be developed of dealing with work and leisure, and universities would play a very important part in the "culture of work", including the relationships between management and trade unions and a whole range of questions about work in society.

Lord Briggs considered unemployment was the most divisive element in society today and universities had to be fitted into a social picture which recognized there was no going back to the employment patterns of 10 or 15 years ago.

There was also a need for more knowledge in society. Changes in the life sciences for example meant it was essential for people drawn into higher education to be able to deal with the questions raised, he said.

"I would like to feel that we were moving into a more participating society where the number of people involved in decision-making is greater and where there is a feeling of participation of a stronger kind than there is in contemporary society," Lord Briggs commented.

New ways had to be developed of dealing with work and leisure, and universities would play a very important part in the "culture of work", including the relationships between management and trade unions and a whole range of questions about work in society.

Lord Briggs considered unemployment was the most divisive element in society today and universities had to be fitted into a social picture which recognized there was no going back to the employment patterns of 10 or 15 years ago.

There was also a need for more knowledge in society. Changes in the life sciences for example meant it was essential for people drawn into higher education to be able to deal with the questions raised, he said.

"I would like to feel that we were moving into a more participating society where the number of people involved in decision-making is greater and where there is a feeling of participation of a stronger kind than there is in contemporary society," Lord Briggs commented.

New ways had to be developed of dealing with work and leisure, and universities would play a very important part in the "culture of work", including the relationships between management and trade unions and a whole range of questions about work in society.

Lord Briggs considered unemployment was the most divisive element in society today and universities had to be fitted into a social picture which recognized there was no going back to the employment patterns of 10 or 15 years ago.

There was also a need for more knowledge in society. Changes in the life sciences for example meant it was essential for people drawn into higher education to be able to deal with the questions raised, he said.

"I would like to feel that we were moving into a more participating society where the number of people involved in decision-making is greater and where there is a feeling of participation of a stronger kind than there is in contemporary society," Lord Briggs commented.

New ways had to be developed of dealing with work and leisure, and universities would play a very important part in the "culture of work", including the relationships between management and trade unions and a whole range of questions about work in society.

Lord Briggs considered unemployment was the most divisive element in society today and universities had to be fitted into a social picture which recognized there was no going back to the employment patterns of 10 or 15 years ago.

There was also a need for more knowledge in society. Changes in the life sciences for example meant it was essential for people drawn into higher education to be able to deal with the questions raised, he said.

"I would like to feel that we were moving into a more participating society where the number of people involved in decision-making is greater and where there is a feeling of participation of a stronger kind than there is in contemporary society," Lord Briggs commented.

New ways had to be developed of dealing with work and leisure, and universities would play a very important part in the "culture of work", including the relationships between management and trade unions and a whole range of questions about work in society.

Lord Briggs considered unemployment was the most divisive element in society today and universities had to be fitted into a social picture which recognized there was no going back to the employment patterns of 10 or 15 years ago.

There was also a need for more knowledge in society. Changes in the life sciences for example meant it was essential for people drawn into higher education to be able to deal with the questions raised, he said.

"I would like to feel that we were moving into a more participating society where the number of people involved in decision-making is greater and where there is a feeling of participation of a stronger kind than there is in contemporary society," Lord Briggs commented.

New ways had to be developed of dealing with work and leisure, and universities would play a very important part in the "culture of work", including the relationships between management and trade unions and a whole range of questions about work in society.

Lord Briggs considered unemployment was the most divisive element in society today and universities had to be fitted into a social picture which recognized there was no going back to the employment patterns of 10 or 15 years ago.

There was also a need for more knowledge in society. Changes in the life sciences for example meant it was essential for people drawn into higher education to be able to deal with the questions raised, he said.

"I would like to feel that we were moving into a more participating society where the number of people involved in decision-making is greater and where there is a feeling of participation of a stronger kind than there is in contemporary society," Lord Briggs commented.

New ways had to be developed of dealing with work and leisure, and universities would play a very important part in the "culture of work", including the relationships between management and trade unions and a whole range of questions about work in society.

Lord Briggs considered unemployment was the most divisive element in society today and universities had to be fitted into a social picture which recognized there was no going back to the employment patterns of 10 or 15 years ago.

There was also a need for more knowledge in society. Changes in the life sciences for example meant it was essential for people drawn into higher education to be able to deal with the questions raised, he said.

"I would like to feel that we were moving into a more participating society where the number of people involved in decision-making is greater and where there is a feeling of participation of a stronger kind than there is in contemporary society," Lord Briggs commented.

New ways had to be developed of dealing with work and leisure, and universities would play a very important part in the "culture of work", including the relationships between management and trade unions and a whole range of questions about work in society.

Lord Briggs considered unemployment was the most divisive element in society today and universities had to be fitted into a social picture which recognized there was no going back to the employment patterns of 10 or 15 years ago.

There was also a need for more knowledge in society. Changes in the life sciences for example meant it was essential for people drawn into higher education to be able to deal with the questions raised, he said.

"I would like to feel that we were moving into a more participating society where the number of people involved in decision-making is greater and where there is a feeling of participation of a stronger kind than there is in contemporary society," Lord Briggs commented.

New ways had to be developed of dealing with work and leisure, and universities would play a very important part in the "culture of work", including the relationships between management and trade unions and a whole range of questions about work in society.

Lord Briggs considered unemployment was the most divisive element in society today and universities had to be fitted into a social picture which recognized there was no going back to the employment patterns of 10 or 15 years ago.

There was also a need for more knowledge in society. Changes in the life sciences for example meant it was essential for people drawn into higher education to be able to deal with the questions raised, he said.

"I would like to feel that we were moving into a more participating society where the number of people involved in decision-making is greater and where there is a feeling of participation of a stronger kind than there is in contemporary society," Lord Briggs commented.

New ways had to be developed of dealing with work and leisure, and universities would play a very important part in the "culture of work", including the relationships between management and trade unions and a whole range of questions about work in society.

Lord Briggs considered unemployment was the most divisive element in society today and universities had to be fitted into a social picture which recognized there was no going back to the employment patterns of 10 or 15 years ago.

There was also a need for more knowledge in society. Changes in the life sciences for example meant it was essential for people drawn into higher education to be able to deal with the questions raised, he said.

"I would like to feel that we were moving into a more participating society where the number of people involved in decision-making is greater and where there is a feeling of participation of a stronger kind than there is in contemporary society," Lord Briggs commented.

New ways had to be developed of dealing with work and leisure, and universities would play a very important part in the "culture of work", including the relationships between management and trade unions and a whole range of questions about work in society.

Lord Briggs considered unemployment was the most divisive element in society today and universities had to be fitted into a social picture which recognized there was no going back to the employment patterns of 10 or 15 years ago.

There was also a need for more knowledge in society. Changes in the life sciences for example meant it was essential for people drawn into higher education to be able to deal with the questions raised, he said.

"I would like to feel that we were moving into a more participating society where the number of people involved in decision-making is greater and where there is a feeling of participation of a stronger kind than there is in contemporary society," Lord Briggs commented.

New ways had to be developed of dealing with work and leisure, and universities would play a very important part in the "culture of work", including the relationships between management and trade unions and a whole range of questions about work in society.

Lord Briggs considered unemployment was the most divisive element in society today and universities had to be fitted into a social picture which recognized there was no going back to the employment patterns of 10 or 15 years ago.

There was also a need for more knowledge in society. Changes in the life sciences for example meant it was essential for people drawn into higher education to be able to deal with the questions raised, he said.

"I would like to feel that we were moving into a more participating society where the number of people involved in decision-making is greater and where there is a feeling of participation of a stronger kind than there is in contemporary society," Lord Briggs commented.

New ways had to be developed of dealing with work and leisure, and universities would play a very important part in the "culture of work", including the relationships between management and trade unions and a whole range of questions about work in society.

Lord Briggs considered unemployment was the most divisive element in society today and universities had to be fitted into a social picture which recognized there was no going back to the employment patterns of 10 or 15 years ago.

There was also a need for more knowledge in society. Changes in the life sciences for example meant it was essential for people drawn into higher education to be able to deal with the questions raised, he said.

"I would like to feel that we were moving into a more participating society where the number of people involved in decision-making is greater and where there is a feeling of participation of a stronger kind than there is in contemporary society," Lord Briggs commented.

New ways had to be developed of dealing with work and leisure, and universities would play a very important part in the "culture of work", including the relationships between management and trade unions and a whole range of questions about work in society.

Lord Briggs considered unemployment was the most divisive element in society today and universities had to be fitted into a social picture which recognized there was no going back to the employment patterns of 10 or 15 years ago.

There was also a need for more knowledge in society. Changes in the life sciences for example meant it was essential for people drawn into higher education to be able to deal with the questions raised, he said.

"I would like to feel that we were moving into a more participating society where the number of people involved in decision-making is greater and where there is a feeling of participation of a stronger kind than there is in contemporary society," Lord Briggs commented.

New ways had to be developed of dealing with work and leisure, and universities would play a very important part in the "culture of work", including the relationships between management and trade unions and a whole range of questions about work in society.

Lord Briggs considered unemployment was the most divisive element in society today and universities had to be fitted into a social picture which recognized there was no going back to the employment patterns of 10 or 15 years ago.

There was also a need for more knowledge in society. Changes in the life sciences for example meant it was essential for people drawn into higher education to be able to deal with the questions raised, he said.

"I would like to feel that we were moving into a more participating society where the number of people involved in decision-making is greater and where there is a feeling of participation of a stronger kind than there is in contemporary society," Lord Briggs commented.

New ways had to be developed of dealing with work and leisure, and universities would play a very important part in the "culture of work", including the relationships between management and trade unions and a whole range of questions about work in society.

Lord Briggs considered unemployment was the most divisive element in society today and universities had to be fitted into a social picture which recognized there was no going back to the employment patterns of 10 or 15 years ago.

There was also a need for more knowledge in society. Changes in the life sciences for example meant it was essential for people drawn into higher education to be able to deal with the questions raised, he said.

"I would like to feel that we were moving into a more participating society where the number of people involved in decision-making is greater and where there is a feeling of participation of a stronger kind than there is in contemporary society," Lord Briggs commented.

New ways had to be developed of dealing with work and leisure, and universities would play a very important part in the "culture of work", including the relationships between management and trade unions and a whole range of questions about work in society.

Lord Briggs considered unemployment was the most divisive element in society today and universities had to be fitted into a social picture which recognized there was no going back to the employment patterns of 10 or 15 years ago.

There was also a need for more knowledge in society. Changes in the life sciences for example meant it was essential for people drawn into higher education to be able to deal with the questions raised, he said.

"I would like to feel that we were moving into a more participating society where the number of people involved in decision-making is greater and where there is a feeling of participation of a stronger kind than there is in contemporary society," Lord Briggs commented.

New ways had to be developed of dealing with work and leisure, and universities would play a very important part in the "culture of work", including the relationships between management and trade unions and a whole range of questions about work in society.

Lord Briggs considered unemployment was the most divisive element in society today and universities had to be fitted into a social picture which recognized there was no going back to the employment patterns of 10 or 15 years ago.

There was also a need for more knowledge in society. Changes in the life sciences for example meant it was essential for people drawn into higher education to be able to deal with the questions raised, he said.

"I would like to feel that we were moving into a more participating society where the number of people involved in decision-making is greater and where there is a feeling of participation of a stronger kind than there is in contemporary society," Lord Briggs commented.

New ways had to be developed of dealing with work and leisure, and universities would play a very important part in the "culture of work", including the relationships between management and trade unions and a whole range of questions about work in society.

Lord Briggs considered unemployment was the most divisive element in society today and universities had to be fitted into a social picture which recognized there was no going back to the employment patterns of 10 or 15 years ago.

There was also a need for more knowledge in society. Changes in the life sciences for example meant it was essential for people drawn into higher education to be able to deal with the questions raised, he said.

"I would like to feel that we were moving into a more participating society where the number of people involved in decision-making is greater and where there is a feeling of participation of a stronger kind than there is in contemporary society," Lord Briggs commented.

New ways had to be developed of dealing with work and leisure, and universities would play a very important part in the "culture of work", including the relationships between management and trade unions and a whole range of questions about work in society.

Lord Briggs considered unemployment was the most divisive element in society today and universities had to be fitted into a social picture which recognized there was no going back to the employment patterns of 10 or 15 years ago.

There was also a need for more knowledge in society. Changes in the life sciences for example meant it was essential for people drawn into higher education to be able to deal with the questions raised, he said.

"I would like to feel that we were moving into a more participating society where the number of people involved in decision-making is greater and where there is a feeling of participation of a stronger kind than there is in contemporary society," Lord Briggs commented.

New ways had to be developed of dealing with work and leisure, and universities would play a very important part in the "culture of work", including the relationships between management and trade unions and a whole range of questions about work in society.

Lord Briggs considered unemployment was the most divisive element in society today and universities had to be fitted into a social picture which recognized there was no going back to the employment patterns of 10 or 15 years ago.

There was also a need for more knowledge in society. Changes in the life sciences for example meant it was essential for people drawn into higher education to be able to deal with the questions raised, he said.

"I would like to feel that we were moving into a more participating society where the number of people involved in decision-making is greater and where there is a feeling of participation of a stronger kind than there is in contemporary society," Lord Briggs commented.

New ways had to be developed of dealing with work and leisure, and universities would play a very important part in the "culture of work", including the relationships between management and trade unions and a whole range of questions about work in society.

Lord Briggs considered unemployment was the most divisive element in society today and universities had to be fitted into a social picture which recognized there was no going back to the employment patterns of 10 or 15 years ago.

There was also a need for more knowledge in society. Changes in the life sciences for example meant it was essential for people drawn into higher education to be able to deal with the questions raised, he said.

"I would like to feel that we were moving into a more participating society where the number of people involved in decision-making is greater and where there is a feeling of participation of a stronger kind than there is in contemporary society," Lord Briggs commented.

New ways had to be developed of dealing with work and leisure, and universities would play a very important part in the "culture of work", including the relationships between management and trade unions and a whole range of questions about work in society.

North American news

The danger in being Canada's leading university

It is a special irony of Quebec's political scene that McGill University, its reputation as the leading university in Canada as a potential danger as well as a source of understandable pride.

Founded in the 1820s in Montreal with a bequest from a Scottish fur trader, McGill today is a thriving university of nearly 20,000 full-time students with a world-class reputation in research.

It is one of only two Canadian universities - the other is the University of Toronto - admitted to the exclusive Washington-based Association of American Universities, a coterie of 50 elite research campuses. Last year its faculty generated \$50m in external research funds - the highest per capita score in Canada.

But McGill is an English language university with a campus in the heart of the second-largest French speaking city in the world. And like all English cultural institutions in Quebec, its relations with the province's separatist Parti Quebecois government are fragile and occasionally fraught.

Dr David Johnston, the principal and vice chancellor, has worked hard to minimize conflicts with the Quebec government, through which the university receives the bulk of its \$200m income. He sees no reason why Quebec's drive to separate from Canada should jeopardize McGill's links with the world of English-speaking universities.

"We are an institution that serves the country of the mind: a precious

Peter David talks to David Johnston (right) principal of McGill university, an English language university in a French-speaking province

intellectual resource for the people and society. We can best serve Quebec, Canada and beyond by seeing ourselves that way", he said. "Anyone looking at the future of Quebec would want to preserve and reinforce an institution which ranks with the dozen or so best universities in the world."

So far, direct confrontations with the Parti Quebecois have been rare, and a sense of fair play has characterized that division of provincial funds between the English and French speaking universities. But a variety of political, financial and demographic trends are beginning to throw a shadow over relations with the ministry of education.

The province's deteriorating economy - McGill estimates that university spending may be cut by up to 40 per cent by 1985 - has prompted the ministry to consider fundamental changes in its distribution of higher education funds. Its aim is to force Quebec's three better established universities - of which McGill is one - to take a bigger share of new students or reduce their per capita spending.

McGill has fewer options than its francophone counterparts. The vola-



tile political scene in Quebec has provoked a rush of English-speaking migration to other provinces. Combined with a downturn in the number of college-age citizens, this exodus will make it difficult enough to maintain enrolments, let alone increase them.

Dr Michelle Fortin, the senior higher education official at Quebec's ministry of education, says the province wants to continue its support of the English-speaking universities but believes they will be forced to consider big changes.

"By the year 2000 their pool (of students) will drop by 20 or 30 per cent. They will either have to cut activities or increase their French student enrolments," she said.

"They could fill the space with English speaking Canadians from other provinces or foreign students. We have said we would react against that option and we are pressing them to open their gates to more French speaking students."

Many at McGill believe the university is fast approaching the point at which it could no longer absorb any additional French-speaking students without a fundamental change in character. At present, 22 per cent of the students speak French and another 20 per cent speak neither French nor English as a mother tongue.

The university's instinct is therefore to seek more English speakers from other provinces and from the United States to compensate for the decline in the number of local anglophone students. But Quebec has already begun to reduce subsidies for foreign students, and is unlikely to underwrite a big increase in the proportion of out-of-province Canadians.

Despite the difficult choices on the horizon, Dr Johnston believes the university's future is secure. Conceding that undergraduate enrolments will probably diminish, he predicts a significant expansion of postgraduate studies. Most research income is, in any case, channelled directly from the federal government and bypasses the ministry in Quebec.

McGill also benefits from a large private endowment of around \$130m, which gives it a margin for independent manoeuvre and enables it to

sustain a library of two million volumes - one of the biggest in North America.

In the long run, however, McGill is pinning its future hopes on its ability to persuade the province that the university is a major asset which ought to be protected from the bitter constitutional battles between Quebec City and Ottawa.

To drive that message home, it has strengthened links in Montreal and buys a weekly column in Quebec's main French newspaper, *Le Devoir*, explaining how McGill's research and teaching benefit the local community.

More importantly, McGill has successfully shrugged off its reputation as a somewhat complacent English speaking enclave and presents itself as a uniquely cosmopolitan institution in which both French and English flourish. A number of courses are run in French and others, notably management and law, are taught in both languages.

According to Dr Johnston, the combination of an English medium university and a French city, together with McGill's academic reputation, make it a highly attractive option for high calibre students from the United States and elsewhere in Canada.

"In many senses, we are a bilingual institution. The overwhelming majority of our students leave the university with competence in both languages. French-speakers are allowed to write examinations and theses in either language."

Britons take part in Moonie conference

from our North American editor WASHINGTON

British academics defied a call by several MPs to stay away and played an active role in the eleventh annual conference on the unity of the sciences sponsored in Philadelphia by the Unification Church (Moonies).

Professor Anthony Flew of Reading University and J. W. Watkins of the London School of Economics delivered papers at the Moonies' conference. Oxford physics Professor Emeritus Nicholas Kurti chaired a session on technology and Dr Kenneth Mellanby, former director of the Munksgaard experimental station in Huntingdon, gave a speech introducing the conference founder - the Rev. Sun Myung Moon, leader of the three million member church which is often accused of brainwashing its young converts.

More than 500 academics from around the world, including many from elite universities in the United States and Europe, attended the conference. A fortnight ago Mr John Hunt, Conservative MP for Bromley, urged British academics to stay away and claimed their participation would

lead respectability to a disreputable organization.

But the academics organizing the event angrily rejected claims that there was anything disreputable about the conference, the latest in a series by the Moonie-founded International Cultural Foundation.

Mr Morton Kaplan, professor of international relations at Chicago University and conference chairman, said the Rev. Moon was responsible for choosing the conference title "The search for absolute values and the creation of the new world" but left the organization to respectable academics with no affiliation to the Unification Church.

This year delegates considered nearly 50 papers on topics ranging from nutrition in Latin America to the possible industrial development of outer space. Most of the papers were secular and academics with one American sociologist describing the quest for "absolute values" as a dangerous and unrealistic attempt to avoid the complexity of modern life.

Professor Flew, whose paper dealt with the nature of rational knowledge, said he saw no reason to boycott a conference which paid him

to write a paper he would have written anyway and provided travel to exotic places. Describing the beliefs of the Unification Church as "totalitarian" he said he had already attended similar events in Korea, Miami and Los Angeles.

Like Professor Flew, Professor Kurti said he did not believe in the doctrines of the Unification Church. He attended the conference to meet academics from other disciplines and countries and for a chance to intercede with the church on behalf of families upset by their children's defection to the Moonies.

The only explicitly religious speech at the conference came from the founder himself. The Rev. Moon, convicted of income tax evasion last summer, called for a reassertion of religious values under the unifying influence of the Unification Church.

Later he presented the first "founder's award" to be given every two years to a scholar advancing the unity of the sciences. Eugene Wigner, the 80-year-old physicist who received a Nobel prize in 1963 for his formulation of the symmetry principles, received a cheque for \$200,000.

Draft law 'discriminating against poor young men'

A new law which would withhold federal grants and loans from students failing to register for military call-up is being challenged in court on the grounds that it violates the United States constitution.

In a suit filed in a district court last month, the Minnesota Public Interest Research Group claims the law, passed by Congress this year, is unconstitutional because it discriminates against poor young men and breaches legally-established privacy rights.

Although there is no conscription in the United States, men over 18 are required to register with the Selective Service Administration so they can be called up quickly in a national emergency.

In recent months the government has brought a number of successful prosecutions against men who have refused to register. One non-registrant, Mr David Wayne, was acquitted last month by a district court judge on the grounds that the gov-

ernment was prosecuting outspoken non-registrants selectively.

The Minnesota group is the first to challenge the legal right of the department of education to deny financial aid to students who failed to register. The department is still in the process of drawing up regulations which would enable it to implement the new law.

Under the law, the Minnesota group alleges, students who had not registered would be punished and, in effect, found guilty of a crime without ever appearing in a court of law. In addition, the penalties could apply only to a specific group of citizens: 18-year-old males needing government assistance to attend university.

However the issue is decided in court, several universities have already made plans to minimize the impact of the law. Claiming that non-registration for military service is often a decision of conscience, a give financial help to students refused government grants or loans.

Minorities flock to Berkeley

The Berkeley campus of the University of California announced last week that it had reversed a national trend and raised the proportion of undergraduates recruited from ethnic minorities to a record level of 32 per cent.

But the vast majority of non-whites were Asian Americans, while blacks and hispanics - who make up a growing proportion of California's population - continued to achieve only a small presence at the state's flagship campus.

According to Berkeley's office of institutional research, 4,388 Asian students were enrolled at undergraduates this year. Blacks and hispanics combined accounted for fewer than 2,000 of the total student body of 20,507.

Peter David, North American Editor, The Times Higher Education Supplement, National Press Building, Room 541, Washington DC 20045; Telephone: (202) 638 6765

Overseas news

Israeli lecturers fight over pay claim

from Benny Morris JERUSALEM

Of Israel's universities have been on strike for the past week as the lecturers and professors moved from carrying out minor sanctions to a fully-fledged strike in pursuit of their pay claims.

Hundreds of students demonstrated during the past few days against the strike, fearing that they would lose the term's credits if the strike goes on. In one demonstration in Tel-Aviv, Rothschild Boulevard, students carried a black-draped coffin in a symbolic burial for the "dead trimester". They held aloft banners proclaiming: "We paid tuition, we want to learn" and "return us to the lecture."

The three-sided talks between the two lecturers, unions, the treasury and the heads of the universities seemed deadlocked, after the lecturers turned down a government offer of a flat advance on the wage action compensation they are demanding.

Dean is penalized over strike

from James Hutchinson BONN

Wassau University's psychology department reopened last week, but without its dean and assistant dean. The department had been closed since further notice" after a strike on November 10, the Solidarity "day of action". The resignations of the dean and assistant dean seem to be the price demanded by the ministry of science higher education and technology for reopening the department.

The Wassau University strike appears to have been the only major academic strike on the day of action, although rallies and protest meetings have been reported from a number of universities.

The fate of the students who took part in the strike is not known. Initially, the authorities hinted that they would be punished under the notorious article 189 of the council of state, which makes it mandatory for the university to expel any student convicted of an offence against the national law regulations - including strikes and demonstrations. Following assurances from the rector, Dr. Kuzmierz Dobrowolski that steps would be taken to "protect the educational establishment against even the slightest violation of the discipline of study and work" it was agreed that the punishment of students who could not provide a note explaining their absence on November 10, on health grounds should be left to the special national commission set up to investigate the stoppage.

The closure of the department evoked considerable concern among the international psychology community, particularly in view of Poland's significant contribution to the department of education psychology of the University of Cambridge, which the Polish Embassy in London, and sent a protest letter to the Polish Minister of Science, Higher Education, and Technology.

In what education minister Zevulun Hammer announced as a "gesture of goodwill," the government offered the junior lecturers a once off payment even without ending the strike of about \$200 and senior academics about \$300. Mr Hammer admitted that lecturers' salaries were "low," especially in the junior levels.

But the chairman of the coordinating committee of the two academics' unions, Professor Nun Shavit, said the offered advance was "ludicrous."

The Jerusalem district court is set to rule at the end of this month on whether an arbitration ruling, awarding the lecturers a 30 per cent pay increase, should stand.

Academics oppose scheme to make grants repayable

from James Hutchinson BONN

An estimated 70,000 students marched through Bonn on Sunday to protest at the Western German government's plan to replace grants by a loans system. University teachers and trade unionists had already started their opposition.

Under the proposed scheme graduates who had received the full maintenance grant would start their career owing the state some DM40,000 (£10,000).

One student organization has forecast that about 60,000 students - 40 per cent of those receiving the full grant - would drop out rather than run up such a big debt. The organization also claimed that young people from the lower income groups would be hit hardest.

There is equally strong resistance to the government's intention to award what amounts to cash bonuses to the most industrious or brightest students and to those who finish their courses ahead of time. Students with the best exam results, for instance, would be exempted from repaying a certain proportion of their grants.

Loans plan to go ahead

from Geoff Maslin MELBOURNE

A federal loan scheme for Australian students is now likely to begin early next year, after a six-week delay in the senate.

Legislation to set up the scheme has now passed this hurdle, despite continued opposition from the Australian Democrats.

The scheme, which will enable full-time tertiary students to borrow up to A\$1,000 (£270) a year at subsidized interest rates, has been the subject of controversy, including action by student groups against the banks involved.

Legislation to set up the loans scheme was first delayed in the senate on October 14 when the Australian Labour Party and the Democrats, who hold power in the upper chamber, voted to refer it to the senate standing committee on education and the arts.

Opponents of the scheme claimed it was the first step towards abolishing the Tertiary Education Assistance Scheme under which students receive a regular allowance from the government. But the federal minister for education, Senator Peter Baume, rejected this and has said the government was committed to a continuation of the TEAS.

After the tabling of the senate standing committee's report, the Labour senators voted with the government to ensure the loan bill's passage.

Although Labour supported the legislation, it still has reservations.



George Schultz: condemned PLO leader

als employed as lecturers in Bethlehem University that they must stop work as soon as their current work permits expire. Eight of the lecturers have stopped already.

Dean is penalized over strike

from James Hutchinson BONN

Wassau University's psychology department reopened last week, but without its dean and assistant dean. The department had been closed since further notice" after a strike on November 10, the Solidarity "day of action". The resignations of the dean and assistant dean seem to be the price demanded by the ministry of science higher education and technology for reopening the department.

The Wassau University strike appears to have been the only major academic strike on the day of action, although rallies and protest meetings have been reported from a number of universities.

The fate of the students who took part in the strike is not known. Initially, the authorities hinted that they would be punished under the notorious article 189 of the council of state, which makes it mandatory for the university to expel any student convicted of an offence against the national law regulations - including strikes and demonstrations. Following assurances from the rector, Dr. Kuzmierz Dobrowolski that steps would be taken to "protect the educational establishment against even the slightest violation of the discipline of study and work" it was agreed that the punishment of students who could not provide a note explaining their absence on November 10, on health grounds should be left to the special national commission set up to investigate the stoppage.

The closure of the department evoked considerable concern among the international psychology community, particularly in view of Poland's significant contribution to the department of education psychology of the University of Cambridge, which the Polish Embassy in London, and sent a protest letter to the Polish Minister of Science, Higher Education, and Technology.

Zeit, and Al-Najah rejected the government's amended formula a fortnight ago.

Last summer, the West Bank military government announced that all foreign nationals working in West Bank universities must sign an individual, separate undertaking declaring that they will not assist or support the PLO.

After expelling 22 lecturers who refused to sign (including one Briton), and issuing a condemnation from US Secretary of State George Schultz, Israel withdrew the separate undertaking requirement. Instead, it included in a list of conditions filled in annually by all foreign lecturers a clause that support for the PLO is contrary to the law.

New medical school for blacks opens

from Craig Charney JOHANNESBURG

South Africa's second medical school for blacks, the Medical University of Southern Africa (Medunsa), has opened officially.

Degrees were awarded to the first 34 doctors to complete their courses, along with 100 other health professionals. The young people had been among those who formed the school's first intake when it began in temporary quarters four years ago.

The school is located in Gu-ranku, a small town in the black "homeland" of Bophuthatswana, about 15 miles from Pretoria. Enrolment now totals about 700, with an eventual target of 3,700. The school's aim is to produce 150 doctors, 50 dentists, and 400 other health professionals annually.

Its opening marks a step towards the alleviation of the severe shortage of doctors which plagues black South Africans. In the black township of Soweto, for instance, fewer than 20 private doctors serve more than one million residents, compared to hundreds who serve the smaller population of white Johannesburg.

Nevertheless, Medunsa was established firmly within the framework of apartheid. Enrolment is restricted to underprivileged blacks. Moreover, the school's location - in a "homeland" declared to be an independent state by Pretoria four years ago - was determined by the old policy of barring black higher education in "white" South Africa.

While there are now two medical schools for the black four-fifths of South Africa's population five well-equipped medical faculties serve the white minority. There are also fears in some quarters that the establishment of Medunsa will put the future of the existing black medical school in Durban into question, since the latter is located in part of "white" South Africa.

He also called for the abolition of the many and complex grades existing inside the post of full professor, rather they should be reduced to a single main grade, he suggested. His report was judged interesting and forgotten.

The ministry, however, will have no truck with a single promotion ladder. Rather it intends to keep the present system of two separate bodies in the teaching profession, one for assistants and non-professorial staff, the other for the professoriate.

The main reason behind the ministry's reluctance to change is the cost. The problem of incremental drift could easily get out of hand. The two ladder system effectively allows the ministry to place a bar on the advancement of the lower grades of the profession.

New talks in status dispute

by Guy Neuve

Several hundred junior lecturers and part-time staff took part in demonstrations in Paris after the breakdown of negotiations over the future career pattern for French academics. The two left-wing unions, the Union Syndicale National de l'Enseignement Supérieur and the Syndicat National de l'Education Nationale, called for a two-day strike to bring pressure to bear on the man at the centre of the talks, M Jean Jacques Payen, director-general of the higher education branch of the education ministry.

Already, the strike seems to have had some results. A spokesman for M Alain Savary, the minister of education, announced that talks would start again in a fortnight. New terms would be on the agenda, he stated.

Some hints as to what these might be emerged from a hasty discussion between M Payen and union representatives as the crowd roared outside.

One possibility, currently under review, is the abolition of the grade of assistant. Holders of tenured posts at this level - they are few and far between - would be nominated to posts at the mid-lecturer level (*maître assistant*). This could take place within five years, the ministry thinks.

Another measure is to grant full-time posts to 200 more temporary part-timers than was envisaged in the budget proposals for higher education in 1983.

M Payen has been strengthening his hand, too. New and tougher measures are to be taken to increase the formal teaching load of those members of staff who do not in addition to their present duties, assume further administrative or managerial responsibilities.

It has been a long and bitterly contested battle. Attempts to change the structure of posts and promotions in French academia has had a long and not entirely honourable history. Late in 1961, M Jean-Louis Quermonne, director of the Institut d'Etudes Politiques, presented his report. He proposed that teachers in higher education be placed on a single ladder of promotion, bringing together both humble assistants and professors.

He also called for the abolition of the many and complex grades existing inside the post of full professor, rather they should be reduced to a single main grade, he suggested. His report was judged interesting and forgotten.

The ministry, however, will have no truck with a single promotion ladder. Rather it intends to keep the present system of two separate bodies in the teaching profession, one for assistants and non-professorial staff, the other for the professoriate.

The main reason behind the ministry's reluctance to change is the cost. The problem of incremental drift could easily get out of hand. The two ladder system effectively allows the ministry to place a bar on the advancement of the lower grades of the profession.

Iranian students refused passport rights

from A. S. Abraham BOMBAY

The Iranian Embassy and its consulates in India are refusing passport extensions to Iranian students disapproved of by the Khomeini regime.

About 1,000 Iranians, whose passports have expired and have not been extended, now face prosecution for staying on illegally in India. The alternative is to return to Iran, where they risk imprisonment, torture and perhaps death.

Recently an anti-Khomeini medical student from Hyderabad in south India who went back to Iran was shot by a firing squad.

regime is sending hundred of *pasdars* (revolutionary guards) to India under the guise of students.

Many of them are well over 30, and about 800 are to be sent soon to root out dissident Iranian students in Indian universities.

The Indian government is aware of this, but apart from routine and vague warnings to foreign students not to "import" their quarrels, it has chosen to ignore the developments.

Bloody clashes between pro and anti-Khomeini groups of students are becoming more and more frequent. An anti-Khomeini march by Iranian and Indian students in Bangalore city was attacked by pro-Khomeini Iranian students. About 20 demonstrators were seriously injured and one Iranian student killed.

Over 400 research scholars on handsome fellowships awarded by the prestigious Jawaharlal Nehru University in New Delhi have, over the last ten years, dropped out of academic work or have yet to finish.

Following a number of charges against the university by 161 MPs, the JNU administration admitted to only "a few scholars" playing truant. Subsequent investigation, however, has found the number to be very much higher.

Although on full-term fellowships 408 scholars have not made the grade yet. Some left to take up well-paid jobs, others complained of indifferent supervisors, yet others gave up for personal reasons.

Campaign against cuts

from John Walshe DUBLIN

Thousands of students took to the streets last Thursday in the first phase of a new militant campaign over education cuts. The peaceful protests were organized by the radical led Union of Students in Ireland which is planning three days of strikes in February.

Last week's stoppage in most colleges had been planned for several months. Fortunately for the organizers the book of estimates which pre-announced severe public spending cuts had been published a few weeks ago by the outgoing Flanna Fail administration.

Pine Gael, the dominant partner in the new coalition government has promised to largely follow the estimates which provided for a reduction in real terms in current spending.

And Labour, the minority party in the new government, campaigned in the general election on the promise of opposition to cuts in education, health and social welfare.

USI is hoping at least that the proposed cuts will be reversed in the budget for early next year. But it is also seeking a better grants deal and a higher level of investment in education opportunities than is likely.

USI has five full time student officers and is led by the unlikely but popular Marxist Brendan Doris who pledges continued protests if their demands are not met. "We make no apologies to anyone," he insists.

Legislation to set up the loans scheme was first delayed in the senate on October 14 when the Australian Labour Party and the Democrats, who hold power in the upper chamber, voted to refer it to the senate standing committee on education and the arts.

Opponents of the scheme claimed it was the first step towards abolishing the Tertiary Education Assistance Scheme under which students receive a regular allowance from the government. But the federal minister for education, Senator Peter Baume, rejected this and has said the government was committed to a continuation of the TEAS.

After the tabling of the senate standing committee's report, the Labour senators voted with the government to ensure the loan bill's passage.

times, the
circumstance 8 n.
present time 121 n.
time-saving

theology 973 n.
higher education
education 534 n.

supplement
increment 36 n.
augment 36 vb.
adjunct 40 n.
make complete

54 vb.

Do words fail you when the common room copy goes missing?

It need never happen again. Just fill in the coupon below applying for a year's subscription to The Times Higher Education Supplement and you will receive a copy of the very latest Roget's Thesaurus absolutely free of charge. This handsome hardback volume specially bound for the Times Higher Education Supplement contains 1300 pages with thousands of clear and concise definitions of words and phrases in current usage. The recommended retail price is £7.95.

Please send the coupon together with your cheque for £22.50 to the address below.

This offer applies to new subscribers in the U.K. only.

Please send me my free THES Roget's Thesaurus and a year's subscription to the Times Higher Education Supplement. I enclose my cheque for £22.50. (Cheques made payable to Times Newspapers Limited)

NAME

ADDRESS

SIGNATURE

DATE

Please send this coupon with your cheque to Nigel Denison, The Times Higher Education Supplement, Priory House, St John's Lane, London EC1M 4BX.

Taking steps to end the bias against technology

Many industrialists fear their problems are too simple to interest academics. One polytechnic encourages them to think again says Felicity Jones

Industry and commerce are meant to be the natural allies of the polytechnics. Forged in the white heat of the new technological age, they were to provide the essential highly qualified and trained technicians and professionals, along the lines of the *Grandes Ecoles* in France and the *Technische Hochschule* in Germany, to implement the country's industrial revival.

But if we are to believe recent theories, as presented in a *World in Action* television programme, the dream has gone sadly astray: the polytechnics are said to have failed to meet that challenge, dogged by the so-called British disease – the belief that a degree in classics is still intellectually superior and more useful to industry and management than one in engineering or applied science. A view, so it is alleged, which is shared by all sectors of our society, including industrialists.

There may be some truth in all this but it is, surely, too simplistic to say that polytechnics have failed completely. In many respects their hands are tied by restrictions imposed when they were in their formative years and had to be guided towards academic quality, which set them at a disadvantage when compared with universities.

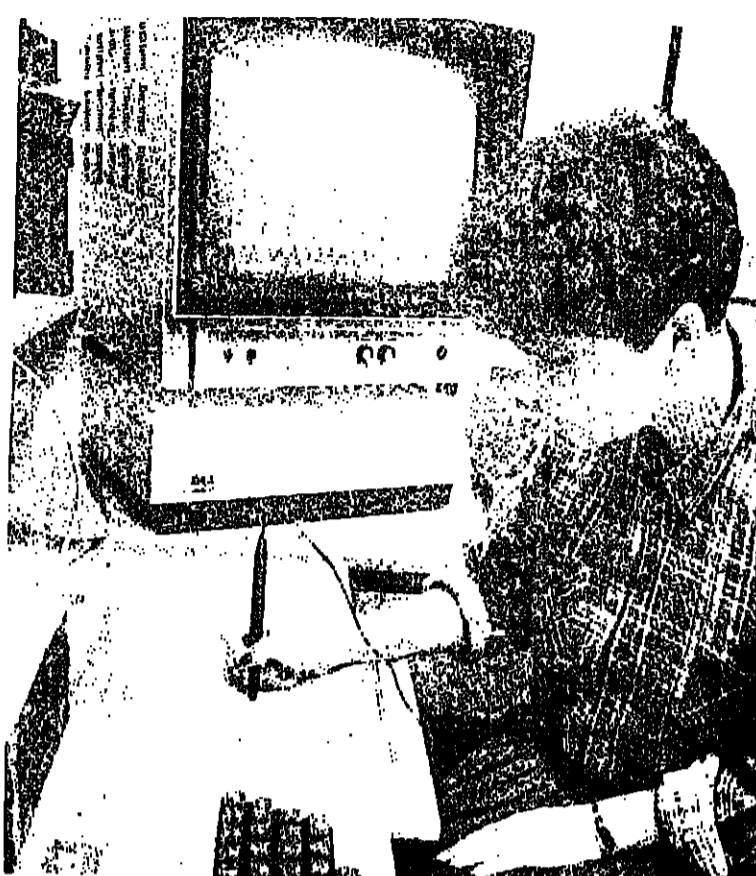
Leicester is one polytechnic which has deliberately set out to weld itself not just to local but to national industries and now earns for itself £2m a year through research, consultancy and courses. It has just received permission from its local authority to set itself up as a limited company to promote one of the offshoots of its research and could be profiting further to finance staff and more research were it not for the risk that public money might be taken away with one hand as consultancy fees are accepted with the other.

Hard cash, of course, is not the sole objective as Dr Sydney Cotton, the deputy director, said in his reply to the government working party, set up under the chairmanship of Sir Alan Muir Wood, to study the links between industry and higher education institutions in research. Dr Cotton wrote that the advantages of collaboration include: the interchange of information enabling academics to keep abreast of industrial developments in their teaching and research; funding; providing a source of unbiased advice to industry and giving industry access to government funds, such as the Science and Engineering Research Council grants for innovations.

Interestingly, he also singled out some of the problems such as the compromise between the time-scales on which industry and polytechnics have to work and the difficulty periods can be viable (described as the "not invented here" syndrome). Echoes of which can be found in what industrialists have to say about polytechnics.

In practice, there is evidence that a polytechnic like Leicester is taking advantage of this collaboration. But it is a slow and painstaking battle against ill-founded prejudice often from industrialists who cling to the image of the old "fics" and need persuasion if they are to change their ideas about new technology.

The first contact with a small shoe or hosiery firm – which form the backbone of Leicester's industrial base – is often crucial. Mr Bob Partridge, the industrial liaison officer, admits that many firms are embarrassed to bring simple problems thinking that ivory-towered academics will



Aid to design: computer few polytechnics could afford

not want to be bothered or are incapable of working out a practical solution which will not entail untold cost or demand elaborate equipment.

In the 15 years of the liaison department's existence, the range of collaborative work has built upon small tentative inquiries to encompass school of management advice to a firm of plumbers about the installation of a mini-computer, to developing an automatic method for the detection of broken drills based on image processing for car manufacturers within the electronic and electrical engineering school. Forty-five short courses a year are run, to bring employees up to date on developments in new technology.

One industry, textiles and knitwear, exemplifies the close relationship between polytechnic and business. Knitting accounts for 50 per cent of the industry in Leicester and the school of textile and knitwear technology trains the technicians for the industry which enjoyed a boom in the 1960s, as synthetic fibres came into their own.

Knitting is unique because the make-up and design are incorporated into one process whereas in textiles material is woven from which pieces are cut. A valuable piece of research which has been patented generated a computer method for making patterns that would fit any body-shape by feeding in the exact three-dimensional measurements which are matched with design needs.

In the design department work is starting to pay dividends in less glamorous areas of the underwear market such as orthopaedic support-wear, bras for sportswomen and maternity patterns.

One textile company, T. W. Kempton, fears that its survival stands or falls through its symbiotic relationship with the polytechnic. The company which produces pullovers and other woollens employs former polytechnic students, takes sand which course students on placements and make full use of consultation and advice facilities.

Mr Russell Kompton, the owner, describes the polytechnic as "a resource of which we make constant use. If I want to know if particular fabrics will combine effectively, I can ring up and get a pretty quick answer. Similarly, a machine developed by the polytechnic's school to test the sewability of fabrics was tested by the company."

Production to sell to successful stores like Marks and Spencer has kept the company buoyant in a bad period of recession for the textile industry but the future is still uncertain. And Mr Kompton views with alarm any linkings with the

polytechnic courses which could upset the balance. "The polytechnic is geared towards high and new technology – an essential lifeline for a company like this – and we are very worried about what the National Advisory Body is going to do with education because if it butchers these courses, then it will kill this industry," he said.

"We need people who understand the intricacies of the knitwear industry and unless we have centres of excellence there will be a hotch-potch of courses which we do not want and we will end up with the technicians we do not need."

He is not uncritical of the way things work at the moment. The immediate response from the polytechnic for short courses is good but it can take a degree course four years (jumping the hurdles of the Council for National Academic Awards and the Department of Education and Science) before it comes into operation and this is a long time for industry to wait.

And although the poly prides itself on its grasp on the new technologies, new computers come out almost every day and Kempton's find there is a disappointing lag in the time it takes the polytechnic to get them built-in to courses. One former design student taken on by the company is now using in her work a computer which tries out designs and colours much faster than ever could be done by hand. But this equipment was not available at the polytechnic: it costs money and polytechnics do not have the kind of funding to keep pace with developments of this sort.

Another business, Triplite, which built its reputation on yarn-feed systems for the textile industry has branched out into making safety equipment for the National Coal Board. The equipment, which works on an electronic spring balance principle and switches off hauling equipment when the metal rope used to haul trucks of coal and men come under too much stress, is now tested in the polytechnic's workshops which possess one of the few computers in the area which can simulate the aging process and measure stress.

Polytechnics like Leicester do have a solid base in industry on which they can build provided that the disabling restrictions are lifted to their external activities. The only way to prove that our technologists are not second class academics is to treat them as equals and not expect them to lead Britain to industrial regeneration with under-funded resources (the average university student costs £4,244 a year whereas a polytechnic student costs only £3,083) and with one hand tied behind their back.

What do science shops offer to their customers?

As this kind of "research into research" suggests, Amsterdam's science shop is well integrated with the university. Elsewhere the situation varies, but most other science shops in Holland probably keep a greater distance between themselves and the university administration. This is partly because Amsterdam is Holland's "red university", but also, paradoxically, because the way the shop works is in some ways less radical than others. It is certainly seen that way by science shop workers in other centres. The shop in the University of Utrecht, for example, puts forward a "participation model" for its work, in contrast to Amsterdam's "mediation model". Shop staff in Utrecht maintain that simply giving answers to inquiries received, or setting up research within the university, help to sustain the mystique of scientific expertise. The Utrecht shop more directly in research, working alongside shop-floor chemical workers, for instance, so that they not only formulate the questions relevant to their needs but determine how the answers are obtained.

José van Eijndhoven, who works in the chemistry and society department at Utrecht and in the university's chemistry shop, describes a risk analysis the shop staff carried out for a union working group concerned with the transport of hazardous chemicals. "We estimated that a slightly better quantitative analysis than those already existing could never have the function we intended for our customer. It would not enhance their insight nor enable them to defend their vision of the problem for themselves."

The Utrecht team believes that "counterexpertise" which makes no attempt to involve the client just leaves the experts discussing the best analysis and does nothing to reduce the distance between technical knowledge and non-academic inquiries. However, this position is hardly calculated to win the commitment to spend 15 per cent of university inspired research funds on science-shop inspired projects which the Amsterdam shop has recently obtained from the university authorities. And Bart van der Lugt of the Amsterdam staff argues that many clients don't want to participate directly in the research as they have too many demands on their energies elsewhere.

However, from a British standpoint, these differences probably matter less than the fact that every university in the Netherlands now has a science shop of some kind. And the shops are united by the positions. One is the need for a basic idea to be developed into projects for demands which the existing shops find it hard to meet. The main effort in this direction is for establishment of "project centres", to study wider issues implicated in science shop questions clustering round a particular area. These centres are designed to intensify contact between scientists and a group of clients, such as trades unionists or environmental groups, to formulate long-term research projects rather than problems discussed in the shops' experience questions from different interest groups on the same subject are very different.

The project centres should have two roles – for specific client groups and for the shops' ambitions to influence the universities. They will help once the widespread feeling that the counter a science shop work can first level of science shop work has little impact on the need for help into the wider origins of these problems. And formulating strategies for each client group will help towards the goal of the shop of changing the balance of workers of changing the balance of university and, ultimately, national science policy.

Once again, Amsterdam leads the way. The science shop acts as a way policy committee of the university board and has to advise on the organization of policy-relevant research. In the future, many Dutch observers will measure the success of science shops by looking at their influence on overall university policy, rather than their use of the existing system to answer individual questions.

In the meantime, the idea of centres for community input into formulation of research problems has been taken up in several other European countries. There are plans for six shops in France and the most advanced, in Paris and Marseilles, were due to start in October. So far, the ministry has been sympathetic, but had declined to promote science shops as a priority. In Belgium, Germany and Italy, science shops are less attractive to official institutions, but there are a few independent efforts, with German for example.

Examining the record of science shop activity in these countries helps suggest reasons why there are no science shops yet in British colleges or universities. According to Lee Diggins, a student at Bradford who has made a close study of the subject, the idea was received well in Germany, partly because there is a tradition of similar work there. Bremen, for example, is known as the "trade unions' university", and there have been experiments in project education in natural science subjects at other universities. In Belgium, by contrast, groups hoping to get science shops started met great difficulties in mobilizing resources within a conservative university system.

What of the prospects for similar initiatives in Britain? So far the British response to science shops has been restricted largely to expressions of interest rather than concrete proposals for home-grown emporia. But now there are a number of projects clearly inspired by the ideas put into practice in the Netherlands. Perhaps enough to make it worth risking a few generalizations.

Adapting the science shop model to the British habitat obviously has to take account of the difference in our higher education system. Dutch students take much longer to earn their degrees than their British counterparts, and have more time for offbeat activities. The legislation governing Dutch universities makes them more receptive to alternative research proposals. From the projects disclosed so far in Britain it seems that centres like science shops will need considerable financial backing to have a chance of becoming established. And as this support is more likely to come from local authorities, polytechnics offer a more promising home for such centres than British universities.

The best known British unit which owes something to the science shop model is the Centre for Alternative Industrial and Technological Systems, now based at the Polytechnic of North London, but originally set up by the Lucas Aerospace combine committee at North East London Polytechnic. CAITS' funding from local authorities, unions and foundations now appears fairly secure, but some aspects of its history are not

on clients' questions mediated by science shops and the others were generated from within the university in the normal way. The two researchers found that client-based projects were more often goal-oriented, and more often tied down to questions which could be answered in the time available. The other projects tended to get bogged down in theoretical work and be difficult to conclude.

As this kind of "research into research" suggests, Amsterdam's science shop is well integrated with the university. Elsewhere the situation varies, but most other science shops in Holland probably keep a greater distance between themselves and the university administration. This is partly because Amsterdam is Holland's "red university", but also, paradoxically, because the way the shop works is in some ways less radical than others. It is certainly seen that way by science shop workers in other centres. The shop in the University of Utrecht, for example, puts forward a "participation model" for its work, in contrast to Amsterdam's "mediation model". Shop staff in Utrecht maintain that simply giving answers to inquiries received, or setting up research within the university, help to sustain the mystique of scientific expertise. The Utrecht shop more directly in research, working alongside shop-floor chemical workers, for instance, so that they not only formulate the questions relevant to their needs but determine how the answers are obtained.

José van Eijndhoven, who works in the chemistry and society department at Utrecht and in the university's chemistry shop, describes a risk analysis the shop staff carried out for a union working group concerned with the transport of hazardous chemicals. "We estimated that a slightly better quantitative analysis than those already existing could never have the function we intended for our customer. It would not enhance their insight nor enable them to defend their vision of the problem for themselves."

The Utrecht team believes that "counterexpertise" which makes no attempt to involve the client just leaves the experts discussing the best analysis and does nothing to reduce the distance between technical knowledge and non-academic inquiries. However, this position is hardly calculated to win the commitment to spend 15 per cent of university inspired research funds on science-shop inspired projects which the Amsterdam shop has recently obtained from the university authorities. And Bart van der Lugt of the Amsterdam staff argues that many clients don't want to participate directly in the research as they have too many demands on their energies elsewhere.

However, from a British standpoint, these differences probably matter less than the fact that every university in the Netherlands now has a science shop of some kind. And the shops are united by the positions. One is the need for a basic idea to be developed into projects for demands which the existing shops find it hard to meet. The main effort in this direction is for establishment of "project centres", to study wider issues implicated in science shop questions clustering round a particular area. These centres are designed to intensify contact between scientists and a group of clients, such as trades unionists or environmental groups, to formulate long-term research projects rather than problems discussed in the shops' experience questions from different interest groups on the same subject are very different.

The project centres should have two roles – for specific client groups and for the shops' ambitions to influence the universities. They will help once the widespread feeling that the counter a science shop work can first level of science shop work has little impact on the need for help into the wider origins of these problems. And formulating strategies for each client group will help towards the goal of the shop of changing the balance of workers of changing the balance of university and, ultimately, national science policy.

Once again, Amsterdam leads the way. The science shop acts as a way policy committee of the university board and has to advise on the organization of policy-relevant research. In the future, many Dutch observers will measure the success of science shops by looking at their influence on overall university policy, rather than their use of the existing system to answer individual questions.

In the meantime, the idea of centres for community input into formulation of research problems has been taken up in several other European countries. There are plans for six shops in France and the most advanced, in Paris and Marseilles, were due to start in October. So far, the ministry has been sympathetic, but had declined to promote science shops as a priority. In Belgium, Germany and Italy, science shops are less attractive to official institutions, but there are a few independent efforts, with German for example.

Examining the record of science shop activity in these countries helps suggest reasons why there are no science shops yet in British colleges or universities. According to Lee Diggins, a student at Bradford who has made a close study of the subject, the idea was received well in Germany, partly because there is a tradition of similar work there. Bremen, for example, is known as the "trade unions' university", and there have been experiments in project education in natural science subjects at other universities. In Belgium, by contrast, groups hoping to get science shops started met great difficulties in mobilizing resources within a conservative university system.

What of the prospects for similar initiatives in Britain? So far the British response to science shops has been restricted largely to expressions of interest rather than concrete proposals for home-grown emporia. But now there are a number of projects clearly inspired by the ideas put into practice in the Netherlands. Perhaps enough to make it worth risking a few generalizations.

Adapting the science shop model to the British habitat obviously has to take account of the difference in our higher education system. Dutch students take much longer to earn their degrees than their British counterparts, and have more time for offbeat activities. The legislation governing Dutch universities makes them more receptive to alternative research proposals. From the projects disclosed so far in Britain it seems that centres like science shops will need considerable financial backing to have a chance of becoming established. And as this support is more likely to come from local authorities, polytechnics offer a more promising home for such centres than British universities.

The best known British unit which owes something to the science shop model is the Centre for Alternative Industrial and Technological Systems, now based at the Polytechnic of North London, but originally set up by the Lucas Aerospace combine committee at North East London Polytechnic. CAITS' funding from local authorities, unions and foundations now appears fairly secure, but some aspects of its history are not

on clients' questions mediated by science shops and the others were generated from within the university in the normal way. The two researchers found that client-based projects were more often goal-oriented, and more often tied down to questions which could be answered in the time available. The other projects tended to get bogged down in theoretical work and be difficult to conclude.

As this kind of "research into research" suggests, Amsterdam's science shop is well integrated with the university. Elsewhere the situation varies, but most other science shops in Holland probably keep a greater distance between themselves and the university administration. This is partly because Amsterdam is Holland's "red university", but also, paradoxically, because the way the shop works is in some ways less radical than others. It is certainly seen that way by science shop workers in other centres. The shop in the University of Utrecht, for example, puts forward a "participation model" for its work, in contrast to Amsterdam's "mediation model". Shop staff in Utrecht maintain that simply giving answers to inquiries received, or setting up research within the university, help to sustain the mystique of scientific expertise. The Utrecht shop more directly in research, working alongside shop-floor chemical workers, for instance, so that they not only formulate the questions relevant to their needs but determine how the answers are obtained.

José van Eijndhoven, who works in the chemistry and society department at Utrecht and in the university's chemistry shop, describes a risk analysis the shop staff carried out for a union working group concerned with the transport of hazardous chemicals. "We estimated that a slightly better quantitative analysis than those already existing could never have the function we intended for our customer. It would not enhance their insight nor enable them to defend their vision of the problem for themselves."

The Utrecht team believes that "counterexpertise" which makes no attempt to involve the client just leaves the experts discussing the best analysis and does nothing to reduce the distance between technical knowledge and non-academic inquiries. However, this position is hardly calculated to win the commitment to spend 15 per cent of university inspired research funds on science-shop inspired projects which the Amsterdam shop has recently obtained from the university authorities. And Bart van der Lugt of the Amsterdam staff argues that many clients don't want to participate directly in the research as they have too many demands on their energies elsewhere.

However, from a British standpoint, these differences probably matter less than the fact that every university in the Netherlands now has a science shop of some kind. And the shops are united by the positions. One is the need for a basic idea to be developed into projects for demands which the existing shops find it hard to meet. The main effort in this direction is for establishment of "project centres", to study wider issues implicated in science shop questions clustering round a particular area. These centres are designed to intensify contact between scientists and a group of clients, such as trades unionists or environmental groups, to formulate long-term research projects rather than problems discussed in the shops' experience questions from different interest groups on the same subject are very different.

The project centres should have two roles – for specific client groups and for the shops' ambitions to influence the universities. They will help once the widespread feeling that the counter a science shop work can first level of science shop work has little impact on the need for help into the wider origins of these problems. And formulating strategies for each client group will help towards the goal of the shop of changing the balance of workers of changing the balance of university and, ultimately, national science policy.

Once again, Amsterdam leads the way. The science shop acts as a way policy committee of the university board and has to advise on the organization of policy-relevant research. In the future, many Dutch observers will measure the success of science shops by looking at their influence on overall university policy, rather than their use of the existing system to answer individual questions.

In the meantime, the idea of centres for community input into formulation of research problems has been taken up in several other European countries. There are plans for six shops in France and the most advanced, in Paris and Marseilles, were due to start in October. So far, the ministry has been sympathetic, but had declined to promote science shops as a priority. In Belgium, Germany and Italy, science shops are less attractive to official institutions, but there are a few independent efforts, with German for example.

Examining the record of science shop activity in these countries helps suggest reasons why there are no science shops yet in British colleges or universities. According to Lee Diggins, a student at Bradford who has made a close study of the subject, the idea was received well in Germany, partly because there is a tradition of similar work there. Bremen, for example, is known as the "trade unions' university", and there have been experiments in project education in natural science subjects at other universities. In Belgium, by contrast, groups hoping to get science shops started met great difficulties in mobilizing resources within a conservative university system.

What of the prospects for similar initiatives in Britain? So far the British response to science shops has been restricted largely to expressions of interest rather than concrete proposals for home-grown emporia. But now there are a number of projects clearly inspired by the ideas put into practice in the Netherlands. Perhaps enough to make it worth risking a few generalizations.

Adapting the science shop model to the British habitat obviously has to take account of the difference in our higher education system. Dutch students take much longer to earn their degrees than their British counterparts, and have more time for offbeat activities. The legislation governing Dutch universities makes them more receptive to alternative research proposals. From the projects disclosed so far in Britain it seems that centres like science shops will need considerable financial backing to have a chance of becoming established. And as this support is more likely to come from local authorities, polytechnics offer a more promising home for such centres than British universities.

The best known British unit which owes something to the science shop model is the Centre for Alternative Industrial and Technological Systems, now based at the Polytechnic of North London, but originally set up by the Lucas Aerospace combine committee at North East London Polytechnic. CAITS' funding from local authorities, unions and foundations now appears fairly secure, but some aspects of its history are not



encouraging. As Dave Elliott and Hilary Wainwright report in their recent book *The Lucas Plan*, letters to around 200 academics thought to be interested in alternative production when the centre started produced only three offers of help.

However, other proposals now on the way come from within polytechnics, rather than trying to graft on units conceived to meet the needs of a particular outside interest. A group at Middlesex Polytechnic, for example, has applied to the Greater London Council for backing for a "science, technology and society" information centre. Len Doyal, one of the moving spirits behind the proposal, explained that the centre would act as an information broker, as the science shops do, in two specific fields – new technology and toxicology. But the outline for the Middlesex centre is already somewhat more ambitious than the basic science shop, including a database which could be integrated with national or even international information networks. The initial budget is likely to run into six figures.

The Middlesex centre is designed to fit into a wider GLC-inspired scheme for "technology networks", which already involves CAITS and the two North London polytechnics, the Intermediate Technology Development Group, the Polytechnic of the South Bank and Central London Polytechnic. Again, this will be a more elaborate affair than the original science shops, but draws on some of the same ideas. The GLC programme is mainly concerned with energy and microelectronics and is more oriented toward production studies than to provision of information. The general impression that British efforts in this area have a stronger orientation toward production than centres in the Netherlands is reinforced by another venture, the Unit for Design of Alternative Products at Lancaster Polytechnic.

However, there are also some moves towards centres more in line with the original science shop model, including a submission to the GLC for a hazards research and information centre in London which asks for shop premises as well as links with shop premises as well as links with a polytechnic. And there have been tentative efforts within Manchester University to set up a local "knowledge shop" – perhaps a better translation of *wetenschapswinkel*. Both of these would build on existing groups advising trade unionists and others about health hazards, often using university's analytical facilities.

So overall the position in Britain remains uncertain. On the one hand there are still more plans and proposals than actual centres. But against this it looks as if some institutions could combine the idea of a science shop with home grown ideas about alternative production to set up something a little more sophisticated than a mediation centre. But it would take an unexpected growth of enthusiasm before science shops became as ubiquitous over here as they are across the North Sea.

Of the total, 20 projects were based

WORLDWIDE

A suitable case for treatment

Gunther Kloss describes the widespread dissatisfaction in West Germany with the country's outdated and inadequate medical education system

West Germany's medical education, which is strictly regulated and controlled by the federal and *Länder* governments, is outdated and inadequate. This criticism comes from students as well as the medical profession. Patients, the unfortunate victims, appear to be largely silent on the matter.

Three areas are particularly under attack. First, there is the large and still growing number of applicants. This autumn there were 46,000 (5,000 more than last year), but only 8,000 places for new entrants to medicine, dentistry and veterinary medicine. Each semester the number of new students admitted to each course is determined according to a complicated formula which is applied throughout the federal republic. Although the number of places has increased substantially in the last decade, competition is intense. A nationwide selection procedure operates, although any restriction on admission is contrary to the country's constitution.

The second problem is the very make-up of the largely identical, tightly structured degree courses. Since the substantial revision of the national state qualification and examination regulations in 1970 a medical course in the federal republic lasts for five years, followed by a so-called "practical year". The first two years constitute the pre-clinical phase, concluded by the preliminary examination which permits access to the three years of the clinical stage.

The practical year completes the medical education. After only another six months in a hospital or with a general practitioner, West German doctors are fully qualified and can open their own practice. If they want to specialize in other branches of medicine, however, they have to spend four more years at university. Apart from the non-residential practical year a student has only four months face-to-face contact with patients, during his or her clinical course.

The third area under attack is the exam structure. The preliminary examination, as well as parts I (after the first clinical year) and II (after the remaining clinical years) and most of part III (after the practical year) of the final state examination consist of multiple-choice written tests. Part III has, in addition, a small oral, which, however, does not reflect the experience gained during the practical year.

The question of admission and selection has a long and vexed history, going back to the late 1960s. Medicine and its allied disciplines have already been the most sought after by the over-subscribed subjects. Hence the problems associated with a *numerus clausus* have shown up in their most acute form here, and the solutions evolved have resulted in a federation-wide selection system. The current one is provisional and transitional procedure, which was to

have ended next year but has now been extended by the ministers of education to 1984.

No generally accepted alternative is in sight, yet the current one is widely rejected. It establishes small quotas of the available places for hardship cases, foreign students, and applicants with outstanding *Abitur* marks. The earlier quota for students who had failed to get a place, possibly several times, is being phased out over four years from 1980, contrary to the wishes of those affected.

The bulk of the places is allocated either on the basis of a lottery, weighted in favour of those with good *Abitur* marks, or on the basis of a combination of the results of an entrance test (taken by 10,000 applicants chosen as random) and *Abitur* marks.

It is these entrance tests – a device totally new and untried in West Germany – which have been particularly controversial. The tests are not subject-specific and not related to a candidate's suitability for the medical profession. An evaluation of the results of the first two tests in 1980 and

'The medical profession is becoming increasingly worried about the doubtful quality'

1981 by a specially-created research institute has shown a close correlation between good *Abitur* marks and a good test result.

The federal constitutional court, appealed to in 1973 by applicants who saw their chances diminished, pronounced, with some reservations, that the phasing-out of the "writting time" was constitutional and the ministers of education consider the additional tests a fair device. Applicants to medical schools and the West German rectors' conference, on the other hand, are not happy with the selection system at all. The medical profession is becoming increasingly worried not only about the doubtful quality and suitability of medical students but also by the foreseeable overproduction of doctors.

Of course, German universities and medical schools themselves would reject the idea of instituting their own admissions and selection procedures, even if these were to be sanctioned by the ministers of education. They would consider these to be outside the province of a university, far too time-consuming. What has been suggested is unrestricted admission on the one hand but a tough "hurdle" examination after a first, introductory, pre-clinical year on the other, which would weed out a considerable number of unwanted

medical students.

Other ideas are being floated. The *Wissenschaftsrat* proposes a split qualification on the British model, "with two years' supervised hospital or GP practice before full registration. The West German rectors' conference a few months ago put forward the idea of instituting a six-months' *Praktikum* between school and university for all applicants, to be spent in a hospital and/or in a GP's practice. Young people would not be paid for this period. It would test their commitment and give the prospective student right from the start a better idea of practical medicine. The lack of this is branded as a shortcoming of German medical education.

The *Praktikum* would be assessed at the end. This assessment, together with the *Abitur* and the test results, would constitute better and simplified admissions criteria than the current complicated procedure. Many people immediately questioned the practicability of the proposal, given, for example, the large number of people to be accommodated. The important new idea is, however, that for the first time an official university body has proposed a non-academic, vocational admissions factor. This looks like an indication of despair.

The chief purpose of the *Approbnationsordnung* reforms in the 1970s was to make medical education more "practical", bringing the student closer to the patient, and to introduce new subjects like psychiatry, psychotherapy, sociology, and psychology. The latter has been quite successful, except that some of it has been nullified by the new examination system. The former which was inspired by Switzerland and the Anglo-American medical school model has been a failure. The written examinations throughout the course testing factual knowledge in a disjointed manner do not provide the opportunity to assess the students' manner with patients and their ability to apply their theoretical knowledge.

More important, the vast number of students has made "small group" teaching in the various subjects in hospital largely illusory. Many students never have the opportunity to examine a patient, and a so-called small group may have as many as 20 members. Often there are too many students and not enough teaching staff or there are simply not enough patients, or enough patients willing to be subjected to repeated examination by large numbers of students.

This applies even to the (unpaid) practical year. This replaced the previous two-year supervised hospital practice where the intending doctor was at least given a limited degree of responsibility. Now even the additional non-university local authority hospitals which in some *Länder* have been designated as teaching hospitals

cannot provide sufficient clinical places and often are simply not equipped to provide the required training.

The view gaining ground is that West Germany's medical graduates are simply not ready to practise. There are not enough chairs of general medicine and just one single one of general practice. Too much of the student's learning consists of piecemeal acquisition of unrelated, detailed, factual subject matter.

The students themselves ignore these aspects of their training because they are not examined in it. The 1970 reforms did away with the predominance of oral examinations. For 100 years these had been carried out by the universities, under the supervision of the state, but had been widely – and not always justifiably – condemned as antiquated, arbitrary and biased. The 1970 reforms substituted the nationwide written multiple-choice test.

Research abroad, especially in the United States, on test theory and practice has advanced much more than is reflected in the rigid German system. This assumes that all aspects

'Whole areas . . . can be neglected and the candidate still be successful'

of medical studies are suitable for testing by means of multiple-choice questions. The result is a one-dimensional subject/content catalogue of 829 pages.

This lists and classifies in detail all entire required content of each subject and thus encourages specialisation and mechanistic learning by the students. It is drawn up by experts in each field. But students tend to learn on the basis of these catalogues and increasingly according to textbooks based on them.

Students fail to attend courses apart from those directly geared to the examinations. Because it is possible to pass with only a certain (variable) percentage of correct answers, whole areas including even medicine or pathology can be neglected and the candidate can still be successful.

The lack of German research into the problems of multiple-choice testing and the uncritical adoption of foreign practices which have since been refined by further research and experience, exposes the entire elaborate German system to serious criticism. It is especially directed at the Institute for Medical and Pharmaceutical Examinations (IMPEP), set up in 1972 as an institution incorporated in law. This marks a major departure from the old system. Now medical examinations are centralized, uniformity is guaranteed and the universities and their academics are

largely excluded from the examination process.

It is true that outside experts, university teachers, assist with the drawing up of the content catalogues. They also decide which questions for the multiple-choice tests go into the "pool". But the final catalogue, the actual selection of questions from the pool for any particular examination, and the determining of the results is a matter for the IMPEP alone.

The IMPEP is headed by a lawyer, not a medically-qualified person, and the heads of its various departments are totally subject to his instructions. There is an administrative council, composed of civil servants from the ministries of health of each *Land*, but there is no provision for a council of medical experts nor for representatives of the medical profession and the medical faculties to evaluate and revise the system.

Naturally, the relations between these bodies and the IMPEP are not good. Matters came to a head in March 1981, when 56 per cent of candidates failed the preliminary examination, a much higher percentage than before. The result was considered a scandal and it was thoroughly investigated. The main reason was an unacceptably steep increase in difficulty. This had also varied in the previous two examinations but had resulted in a gradual drop in the failure rate from 25.6 per cent to 10.6 per cent. This followed a rise of the qualifying hurdle for passes from 50 per cent to 60 per cent in 1979 and the inclusion of a growing number of previously used questions. The IMPEP was accused of unacceptable manipulation of the examinations.

In spite of these substantial accusations no revision of the structure and working methods of the examinations institute is envisaged. The health ministers, retrospectively, found a political solution and allocated 31 additional "correct" questions to each candidate, thus increasing the percentage of passes.

The federal ministry of health is responsible for any reform of medical education. In spite of the widespread dissatisfaction with the current medical training and qualifying the candidate can still be successful. The lack of German research into the problems of multiple-choice testing and the uncritical adoption of foreign practices which have since been refined by further research and experience, exposes the entire elaborate German system to serious criticism. It is especially directed at the Institute for Medical and Pharmaceutical Examinations (IMPEP), set up in 1972 as an institution incorporated in law. This marks a major departure from the old system. Now medical examinations are centralized, uniformity is guaranteed and the universities and their academics are



Kasem (centre, front) and the other Thai rectors with CVCP representatives in London

How Thais keep the universities happy

When student troubles brought Bangkok to a standstill in 1974, toppling the government and even leading to the adoption of a new constitution, the incoming prime minister, the obvious but unusual step of taking an academic to take charge of the universities and prevent a recurrence. As dean of the faculty of social science in Thailand's oldest and most respected university, and a member of the legislative assembly, Kasem Suwanagul was the man for the job.

More than a year, Dr Kasem's dominance was sufficiently impressive to earn a recall as minister for state universities in 1976. Today students are quiet, Thailand is prospering and adding to its 11 universities and Dr Kasem is not only a member of the Cabinet but rector of the university as well. The dual role does cause occasional conflicts of interest, but the universities can only complain that their case is not heard at the highest levels.

Indeed, at a time when the world is hitting Thailand as hard as comparable countries, higher education is regarded as well supported financially. The total educational budget regularly exceeds that for defence and is always among the top spending departments. A successful open university has begun operations in the last two years and a commission of inquiry is due to report in the new year on whether the country needs more universities. The likelihood is that at least one more will be proposed, to serve the East-Northeast, where large firms of natural gas are stimulating the demand for trained, technical workers.

For the moment, Thailand has 10 conventional universities and three open-giving institutes, all of which award the certificate of secondary education and then select on the basis of entrance examinations. Only 10 per cent of the qualified applicants are placed. The safety valve is not the Sukhothai Open University, which accepts only those in employment and concentrates on sub-degree work, but the Ramkhamheang University – an open access institution which has to admit all qualified applicants.

Ramkhamheang has an astonishing

total of some 500,000 students enrolled on its single Bangkok campus, with a second campus due to open next year. No one is obliged to attend classes but 85,000 do so each day, often in lectures attended by hundreds of students, and 300,000 are considered "serious students". But examination standards are on a par with the other universities and only 10,000 graduate each year.

Enrolments at the Open University, too, illustrate the thirst for higher education in Thailand. Set up in 1978 but only in its third year of operation, the OU now has 150,000 students on its limited range of courses. The academic programme has been tailored deliberately towards meeting manpower needs first and unfulfilled academic ambitions second. A thriving course for the thousands of influential village headmen is a prime example of this. Although it is of a comparatively low level, the knock-on effect on the rural population is expected to be immense.

By far the most prestigious of the universities is Chulalongkorn, where Dr Kasem himself is rector. Established in 1917, it is the only institution to cover the full spectrum of disciplines at degree level and, with more than 16,000 students, is bigger than all but one of the conventional universities. Four of its counterparts and the three institutes have all been formed in the last 20 years, which have seen Thailand's student population throughout higher education rise to a million in a country of 50 million people.

Until 1964, all the universities were located in Bangkok, where the vast majority of students are still to be found. Now, however, the government's priority is the development

Private sector mushrooms as university stays closed

The National University of El Salvador was closed on May 26, 1980 after a six-hour gun battle between national guardsmen and left wing guerrillas which left 250 people killed or wounded.

Today, the sprawling campus, overgrown with weeds, its walls still ringed with revolutionary graffiti, remains closed with little prospect that it will reopen in the near future despite the country's desperate need for adequate higher education.

Some 10 National University students, no less than 23 private university students have sprung up around the campus, most of them operating out of private houses and offering much in the way of academic standards.

The only institute of higher education considered to adhere still to recognizable academic standards is the Jesuit-run University of Central America. But, this has come under attack recently from right wing elements both inside and out, the Roman Catholic church for

allegedly propagating radical ideas. According to the ministry of education, the newly-created private sector together with the University of Central America provide only 30,000 of the 90,000 university places needed. Another drawback of the private universities is that their fees are too high for many potential students in what is the second poorest country in central America.

Calls for the reopening of the National University have been made in the Constituent Assembly on a number of occasions since the elections of last March. The political tions of the guerrilla movement, the Revolutionary Democratic Front (FDR), has also said that a reopening of the campus would be one of its early demands should negotiations begin to end the three-year-old civil war.

Nevertheless, despite the fact that any decision to reopen the univers-

Tragedy following Argentine repression

Contemporary Argentine education has been characterized by many of the same unhappy terms applicable to contemporary Argentine politics: repression, crisis, decline, stagnation, and uncertainty. Moreover, the tragedy of Argentine higher education is deepened by the sense of lost success.

For while the Argentine political system did not usually assume clear leadership among Latin American countries in establishing national unity, effective government, and democracy, Argentine higher education did achieve clear ascendancy.

None the less, it would be wrong to think of a steady positive evolution up until the 1976 military coup. It was in Córdoba, Argentina, 1918, that the much ballyhooed, often praised, often cursed, University Reform was launched for much of Latin America. Cogovernment among students, professors, workers, and administrators (something "new" for many Europeans in the 1910s), meant not only expanded participation but also obstacles to maintaining academic standards.

Various military governments violated the Reform, intervening in university affairs. Juan Perón, ruling in the 1940s and 1950s, assumed a demagogic, populist stance that lowered university standards. The re-establishment of democratic government in the late 1950s gave new hope to the academic world, but the military coup of 1960 had a chilling effect and the return of Peronist rule in the 1970s represented a further blow. Thus, by 1976, largely due to political influences, Argentine higher education was no longer the Latin American leader.

The university's fate since 1976 has been shaped significantly by the overall political-economic goals of Argentina's military rulers. Central elements have included the repression of popular demands deemed irrational or irresponsible, the exclusion of groups that make such demands, and severe cutbacks in social-welfare expenditures in order to revive the economy.

The Argentine military's shock treatment for the economy and society fell hard on education, particularly higher education. Cuts in subsidies and enrolments strongly paralleled those in neighbouring Chile, but contrasted to spectacular growth in neighbouring Brazil. From a region leading 150,000 in 1955, Argentine enrolments climbed to roughly 250,000 by 1965, and after creeping slowly upward to 275,000 by 1970, they then soared to roughly 600,000 by 1975. Data vary as to whether growth was subsequently halted or reversed, but dramatic growth was at least stopped short.

One poignant indicator of *junta* policies has been the number of first year enrolments allowed. This figure was only 43,000 in 1977 (with a small increase by the end of the decade), compared to a peak (1974) of 128,000. Meanwhile, Chile's total enrolments since its 1973 coup have stagnated around 135,000, while Brazil's, since its 1964 coup, have moved energetically and constantly upward, from 150,000 to nearly ten times that figure, and Brazil has easily passed Argentina as the Latin American nation with the largest higher education system, with Mexico moving into second place.

Prime rationales for the Argentine purges, like the Chilean ones, have included the felt need to cut personnel and expenditures, to rid youth of irresponsible leftist teachers, and to rid the university of unqualified, unproductive, personnel. As a corollary, purges have been especially severe in politically sensitive areas, notably the social sciences.

The preoccupation is as much pedagogical-social as political-economic. Nationalism, parochialism, conservatism, and factual regurgitation are more compatible with the Argentine military's thinking than are critical analysis or curricula innovation. For

WORLDWIDE

example, a vicious campaign was launched against "new maths" deemed subversive for undermining parental authority (since many parents could not understand it) and for suggesting that purely factual questions might have multiple or subjective answers.

To ensure that proper policies are executed, the Argentine military has appointed public university rectors (though it has not followed Chilean practice of appointing military officers), and has given these rectors broad authority to appoint their subordinates and to implement policy without regard for opinions from below. Student organizations, previously so active and tied to national partisan politics, have been thoroughly repressed, with meetings and publications banned.

The roots of the very harsh Argentine situation, comparable to Chile's and well beyond Brazil's, can be traced to the shape and profound degree of politicized mobilization that preceded the coup. In many fields, including higher education, radical ideologies (populist Peronism in Argentina, Allende's Marxism in Chile) mobilized the working class and were seen as fundamental threats by the elite. The military, with widespread elite support, at least initially, therefore undertook to go beyond traditional Latin American military practices in which "excesses" were forcibly undone and power than handed back to "responsible" civilians.

Now the idea was that even well-intentioned civilians had proven incapable of holding the line and that military rule must reshape society in all important aspects, including educational, before relinquishing power. In Argentina, the greater perceived threat in 1976 than in 1966 helps explain why ensuring military rule has been so much harsher in the more recent case. It has involved more repression, more arrests, more forced reversals in previous policies. When repression did hit especially high levels in the earlier period, as in a June 1969 assault on students and workers, it helped to delegitimize the government, weaken it, and ultimately hasten its downfall.

And yet – notwithstanding all the recent repression – there has been enormous uncertainty in the Argentine *junta's* policy.

Argentine difficulties reflect the elite divisions that have resulted in considerable ministerial instability, seen in education as well as in economics. For all the power the *junta* has had to repress society, it has rarely achieved internal consensus. Nor has it achieved great autonomy from the bourgeoisie, which represents powerful interests affected by any proposed higher education policy.

As time passes, pre-coup threats lose some of their initial power to unify divergent elite groups against common enemies. Instead, a system of mutual vetoes develops wherein no group in strong enough to impose its preferred plan, while many are strong enough to veto others' ideas. Thus, higher educational policy, like *junta* policy in general, remains essentially repressive and defensive, with little positive consensus even among the rulers.

Argentine higher education policy has been characterized more by destruction than construction, by repression than replacement.

If there is any new Argentine order, it is largely the byproduct of repressive policies that fall harder on some areas than others. It is not a new order based on new ideas backed by political will. Perhaps the most significant qualification lies in some private universities where innovation can take place ad hoc, without need for coherent public policy decisions.

For the most part, however, Argentine higher education has been unable to follow repression, crisis, and decline, with a sense of progress towards any alternative. The tragedy of contemporary Argentine higher education lies in the repression which has helped to bury a system that once led by example, a repression which squanders the enormous talents of so many who developed their skills under that system.

Daniel Levy

Geoff Maslen reports from Australia on a study which shows how education influences the success of young people's careers

Climbing up the ladder

A ten-year longitudinal study of Australian young people has confirmed the profound influence of education on the success of their subsequent careers.

The study found that, contrary to conventional wisdom, it would not have been easy to predict the 1980 occupations, income and earnings of a class of 1971 secondary school students by knowledge of their parents' incomes, occupations and earnings in 1970 since most of these associations were not statistically significant. Moreover, the study results also contradict popular beliefs that IQ, country of birth, and mothers' and fathers' education, occupations and income make a difference to the life chances of young people.

"We regard this as a substantial finding with important implications for equality of opportunity in Australia," say the authors of the study, Professor Richard Blandy and Sue Richardson of the National Institute of Labour Studies at Flinders University, in South Australia.

In their report *The fate of the class of '71*, the researchers point to an "extraordinary rate of intergenerational upward educational mobility" among the group under investigation – more than 1,000 young South Australians who were in the final three years of secondary schooling in 1971.

The study found, for example, that nearly all the children who had degrees in 1980 came from families in which their fathers and

mothers did not have degrees themselves. To an overwhelming extent, say the researchers, young people with degrees are the first generation in their family to have such a qualification. More than a third of their parents had not even reached the tenth year of secondary schooling.

The chances of both a child and a parent having a degree are roughly double the chances of a child with a degree having a parent who did not. This is an extraordinary extent of equality of opportunity by world standards, the researchers say.

The intention of the class of 1971 project is to shed light on what happened to a particular group of young people in the space of 10 years and beyond. It wants to use their experiences to explore fundamental propositions about the operations and outcomes of labour markets.

The 1971 sample has drawn in representative fashion from all schools and areas in South Australia, including country and independent schools. It included a wealth of data about family background as well as about the characteristics of the students themselves.

In 1981, data was obtained on the life histories of these young people since the first survey, so providing a longitudinal data file of rare richness for Australia. As other surveys

have discovered, those students who had left school at the end of the tenth year had the highest rate of unemployment exceeding three months duration in any year from 1975 to 1980.

The most important influence on their choice of jobs cited by all students was their educational qualifications, with pay being second. Completed years of schooling appeared to be the most powerful and consistent characteristic affecting the subsequent career outcomes of both males and females in the class of 1971 the researchers say. Next in importance was career aspirations.

Blandy and Richardson qualify their findings by saying that the results require careful consideration before being applied to the broad community. The outcomes relate to a group of young people early in their adult careers, to modify conclusions drawn at this stage in their lives.

In particular they say, at the age of the second survey, the gains from prolonged schooling were just overtaking the gains from extra workforce experience resulting from leaving school early. In later years, the gains from extra schooling were likely to be greater. The fact that the young people under inves-

tigation were in school in 1971 could mean that their story was not a good guide to the prospects of behaviour of young people in school now.

Nevertheless, the researchers conclude that longer schooling and higher education qualifications distinguish high income earners from low income earners among both males and females. Completed years of schooling was the most powerful characteristic associated with occupational status. Experience and length of schooling together were the most important factors determining earnings.

Other results of the study showed that most of the annual increases in earnings received by these young people during the 1970s were "egalitarian". Those at the bottom of the wage scales received greater relative pay increases than those at the top, especially after 1975/76. Their IQ, need for achievement, foreign or Australian born, country or city location, parents' education and occupation and type of school attended were not supported as important causes of differences in earnings.

During the 1970s, there has been a general increase in job satisfaction among both men and women, and a general fall in achievement needs affecting young men.

The chances of son and daughters of fathers with a high income also having a high income were about the same as the chances of sons and daughters of lower income-earning fathers having high incomes.



Andropov (right) pulled the strings from Budapest to quash the revolution in Hungary



Andropov as ambassador

The new Soviet leader, Yuri Andropov, has been variously described as an intellectual, a moderate, and even a liberal. It has been said that he advised against Soviet military intervention in Afghanistan, and also in Hungary in 1956 - claims somewhat at odds with the fact that on both occasions he played a major role in the operations. Other commentators have presented more dramatic accounts of his involvement in the betrayal, capture and execution of the leaders of the Hungarian uprising, including the prime minister Imre Nagy.

It is certainly a curious coincidence that Andropov's appointment should occur just as we approach the 25th anniversary of the year in which Imre Nagy was secretly tried and executed, for, as Soviet ambassador to Hungary in 1956, Yuri Andropov played a key role in handling the Nagy government during the revolution, and later pressuring the new government during the revolution, and later pressuring the new government of János Kádár into handing Imre Nagy over into Soviet custody. It also seems to have been Andropov who was responsible for persuading Kádár into handing Imre Nagy over into Soviet custody. It also seems to have been Andropov who was responsible for persuading Kádár, the Communist Party leader who at first backed Imre Nagy, to part with his former comrades and throw in his lot with the Soviet invasion.

At the time of the uprising, on October 23 1956, János Kádár was not the favoured choice of the Soviet leaders, whose most trusted confidant was Ferenc Münnich, an old KGB hand who had been an agent of the Comintern in the 1930s, and an officer in the Soviet army in the 1940s. Münnich, however, was not at the time in Budapest, but in Belgrade as Hungarian ambassador to Tito's Yugoslavia.

When the revolution broke out in Hungary, he went immediately to the Soviet embassy in Belgrade, where he remained for several days. In constant touch with the Soviet leaders, towards the end of October he returned to Budapest, already well briefed on the Soviet plans, and on October 27 he assumed the key post of minister of the interior in the new government of Imre Nagy.

In Hungary, meanwhile, the Soviet leaders Mikoyan and Suslov were guests of Andropov in the Soviet embassy. It was here, on the morning of October 28, that they informed Imre Nagy he had the full backing of the Soviet leadership for his governmental changes and programme of reforms.

Looking back, this manoeuvre was clearly a means of buying time while Khrushchev and Malenkov, were seeking the support of other East bloc leaders, including Tito, for their planned invasion. It was also while the Soviet forces in Hungary were being regrouped and reinforced for the coming action. As these preparations

Bill Lomax tells how the USSR representative manipulated the Hungarian leaders in the 1956 uprising.

were going ahead, Andropov was skilfully holding the fort in Budapest.

By the end of October, the influx of new Soviet forces into Hungary was so massive as to be no longer deniable - except by Andropov who, summoned before Imre Nagy on the morning of November 1, declared he knew nothing of them. Returning a short while later, after consulting his government, Andropov explained that while new forces had indeed entered the country, this was only to restore discipline among those already there and to assist in their withdrawal. But he adamantly refused Nagy's request to give a commitment that no further Soviet forces would enter Hungary.

Unsatisfied with this answer, Imre Nagy summoned both the Communist Party leadership and the Council of Ministers, and after considerable discussion the government decided to declare Hungarian neutrality and to unilaterally withdraw from the Warsaw Pact. In mid-afternoon, Andropov was again summoned to the parliament to be personally informed of these decisions.

It was here that the Party leader János Kádár angrily rebuked him with the charge that while there had as yet been no counter-revolution in Hungary, there could be one if the Soviets provoked it. Should they be so foolish as to send their tanks once again against Budapest, he as a Hungarian, and as a Communist, would have no choice but to fight, arms in hand, against them, alongside the Hungarian workers.

A few hours later, Kádár was to meet Andropov again, this time in the Soviet embassy, where he had been taken by Ferenc Münnich, completing the mission with which he had returned to Budapest. The Soviet government, Andropov now informed Kádár, did indeed plan to send its tanks into Budapest. The decision had already been taken, and it was János Kádár's duty as a Communist to support it.

Kádár was then flown out of Hungary to the Soviet Union where, at Uzhgorod in the Carpatho-Ukraine, he conferred with other East bloc leaders, and with Khrushchev himself on the latter's return from his visit to Tito. Münnich, meanwhile, proceeded to the Hungarian town of Szolnok, 30 miles to the east of Budapest, where he brought together a core of hard-line Stalinists to form a government that would support the Soviet armed suppression of the revolution.

On the afternoon of November 4, several hours after the start of the new Soviet attack, they were joined by János Kádár, whom the Soviet leaders had finally decided, under pressure from the Yugoslavs, to

appoint as prime minister rather than Münnich.

Back in Budapest, Andropov himself had also been busy. Though fully aware of the Soviet plans to invade, he approached Nagy on the morning of November 2 with proposals to start negotiations on the withdrawal of the Soviet troops from Hungary. He also announced the alarming news that his embassy was under siege from counter-revolutionary insurgents. Unless this state of affairs was brought to an immediate end, he would have no alternative but to resort to the use of Soviet troops in his own defence.

At Imre Nagy's request, General Béla Király, the military commander of Budapest, in the company of a small tank unit, sped hurriedly to the Soviet embassy - only to find its surrounding streets calm and deserted. Andropov had been caught out in a clumsy attempt to fabricate a pretext for the coming Soviet invasion.

The negotiations for the withdrawal of Soviet troops commenced in the Hungarian parliament on the morning of November 3, and were continued in the evening at the Soviet military headquarters at Tököl, several miles to the south of Budapest. The Hungarian delegation was led by the minister of defence, Pál Maléter, the Soviet by General M. S. Malin, commander-in-chief of Soviet forces in Hungary.

The latter appeared to be negotiating in good faith, and to be taken by surprise when, shortly after midnight, the talks were suddenly interrupted by armed KGB officers - by some accounts, personally led by the head of the KGB, General Ivan Serov - and Maléter and his colleagues were arrested.

Kádár was then flown out of Hungary to the Soviet Union where, at Uzhgorod in the Carpatho-Ukraine, he conferred with other East bloc leaders, and with Khrushchev himself on the latter's return from his visit to Tito. Münnich, meanwhile, proceeded to the Hungarian town of Szolnok, 30 miles to the east of Budapest, where he brought together a core of hard-line Stalinists to form a government that would support the Soviet armed suppression of the revolution.

On the afternoon of November 4, several hours after the start of the new Soviet attack, they were joined by János Kádár, whom the Soviet leaders had finally decided, under pressure from the Yugoslavs, to

leagues were arrested.

Little more than an hour later, the first Soviet troops started to break through Budapest's perimeter defences. As the news reached Imre Nagy, he also received a personal visit from none other than Ambassador Andropov, assuring him that the Soviet Union had no aggressive intentions against Hungary, that some mistake must have occurred, and seeking to dissuade the Hungarian government from taking any defensive measures.

By dawn, however, Soviet forces were engaged in a massive, armed attack on Budapest. Imre Nagy and his ministers fled to safety in the Yugoslav embassy, where they had been offered asylum on the direct intervention of Tito, after his talks with Khrushchev. Shortly afterwards, a radio broadcast announced the formation of a new government under János Kádár and Ferenc Münnich, who had called for Soviet help to crush the revolution.

Although Kádár was Party leader and prime minister in the new regime, he was by no means fully in charge of events. The strong man, and main confidant of the Soviet leaders, remained Ferenc Münnich, who now served as first deputy prime minister and minister in charge of the armed forces and state security. In the first weeks after the revolution, while Kádár acted as a figurehead presenting an image of continued promise and conciliation in an attempt to win popular support, real power lay with the Soviet army.

A crucial point in the consolidation of the new regime was reached on November 22 when Imre Nagy was tricked into leaving his asylum in the Yugoslav embassy, an action which resulted in his seizure by the Soviets, and his deportation, against his will, to Romania. Nagy had left the embassy after receiving a written guarantee of safe conduct from the Hungarian prime minister, János Kádár, though there is reasonable doubt as to whether Kádár himself

realised that he was involved in an act of treachery.

But Andropov was certainly aware of what was going to happen, for three other members of Nagy's retinue - György Lukács, Zoltán Vas and Zoltán Szántó - had left the embassy four days earlier, only to be seized by Soviet forces and taken to the Soviet military headquarters at Mátyásföld. There they had been visited on the night of November 18 by none other than Ferenc Münnich. It is a reasonable assumption that the abduction, trial and execution of Nagy and his colleagues was masterminded by Münnich and Andropov working together behind Kádár's back.

In the first months of direct military suppression of the revolution, Andropov was effectively the Soviet overlord of Hungary. He was working jointly with the military commanders of the Soviet armed forces in directing the occupation, and establishing the authority of the new Hungarian government.

It was in this period that the last remnants of armed resistance were wiped out, the workers' and intellectuals' organisations crushed, and tens of thousands of Hungarians arrested and interned, but the trials and executions that served to terrorize the population into acquiescing in the new regime came only later, after the initial consolidation in spring 1957. By then, however, Andropov was no longer influencing Hungarian events. Having suffered a heart attack, he was replaced as Soviet ambassador at the beginning of March 1957.

The high point of the trials came more than a year later when Imre Nagy, along with Pál Maléter and other leaders of the revolution, were secretly tried in Budapest, sentenced and executed on June 16, 1958. Though he was no longer so directly concerned with Hungarian affairs, there can be little doubt that the opinion of Andropov, now deputy head of the Soviet Central Committee's department for liaison with other East bloc parties, was taken into account when deciding on the sentence to be handed out to Nagy.

In retrospect, Yuri Andropov's role in 1956 shows him to have been a ruthless, and highly skilled political operator. From beginning to end he played the role of a calculating traitor, manipulating the Hungarian leaders - first Nagy, then Kádár - so as to defend the Soviet Union's political and strategic interests, and to keep Hungary within the Soviet sphere of influence. But *raison d'état*, was the motivation of his behaviour.

The author is a sociology lecturer at Nottingham University. His Hungary 1956 (Alison & Busby, 1976) was circulated in Hungary in Samizdat form last year and has now been published in Hungarian by Magyar Füzetek, Paris.



Andropov seems jovial but is a ruthless and highly skilled political operator

After Chomsky's revolution

Ference Moore and Christine Carling examine Chomsky's contribution to the study of language and argue that his model of explanation is insufficient

During the 1960s and early 1970s, linguistics emerged into the intellectual limelight as a field full of promise. Largely dominated by one man, Noam Chomsky, it was believed by many to be one of the most technically sophisticated of the human sciences, throwing new light on fundamental issues in the related fields of psychology and philosophy. Yet today theoretical linguistics is deeply divided with little agreement on its problems and methods of investigation, and with few of its findings not in dispute.

The reasons are only now becoming clear. With the gift of hindsight it is now possible to show why the promise was in reality a false one. Paradoxically under Chomsky's influence linguists turned out to be moving not closer to but further away from the fundamental issues in language acquisition, understanding and production they initially seemed to be confronting.

How it came about that a science of language as linguistics should be founded in its own disputes is a complex story with a long history. Chomsky's own attempts to turn linguistics into a "hard" science was a reaction to the view prevalent when he entered the field of a scientific linguistics should be founded in its own disputes is a complex story with a long history. Chomsky's own attempts to turn linguistics into a "hard" science was a reaction to the view prevalent when he entered the field of a scientific linguistics should be founded in its own disputes is a complex story with a long history.

In the roots of the present problem even further back, back to the time of the so-called father of modern linguistics, Ferdinand de Saussure. Simplified considerably, Saussure's view was that language was a system of signs, constituting a code that could be studied independently of its users. To sustain this view, he gave the apparently unsystematic and irregular character of natural speech, Saussure a distinction between *langue* and *parole*. *Langue* was the system structure underlying the particular utterances people make. Utterances themselves were instances of *parole*. *Parole*, with more than a tinge of contempt, came to be viewed as the task of the linguist was to study *langue*, the system, rather than instances of *parole*, the utterances.

Langue, the linguistic system, certainly appeared to provide twentieth-century linguistics with an object of study that was self-contained and intelligible in a way that the complex, unproductive idealization upon a substance as a bold attempt to impose scientific inquiry.

In sharing the assumption that language could, for the purposes of investigation, be isolated from its context, Chomsky himself was Saussurean. He too divided the field of linguistics into two distinct domains: *competence* and *performance*. Chomsky's dichotomy, although similar in some respects to Saussure's, is not identical with it. Yet in forcing linguistics to isolate language from its context, both the *langue/parole* and *competence/performance* distinctions have led to a linguistics largely divorced from the way language actually works.

Despite these links with the past, Chomsky did undoubtedly offer something new to linguistics. It was, however, as many people have pointed out, new insight into language, rather than new views about the psychology of science. The reason for this was that Chomsky's early work aroused such passion and, in some quarters, dismay and hostility, lay in his efforts to introduce into linguistics a scientific method that was novel in the human sciences. This emerges more clearly from his view of science as compared with the approach then favoured by

the North American structuralists. The theme that emerges time and again from the theoretical writings of such major figures as Harris, Hockett, Joss and Bloch, is their determination to practise linguistics in such a way as to establish the subject as unmistakably on a par with the physical sciences. A hint as to what made science science for Chomsky's immediate predecessors is found in their praise of Bloomfield for his consistent care in writing about language "to use terms that would imply no tacit reliance on factors beyond the range of observation". The neo-Bloomfieldians were determined to replace the subjectivity that they believed tainted European linguistics at that time with a greater degree of objectivity in describing the sounds and structure of languages. For them objective description was not compatible with what they called "mentalistic" terms. The linguists they characterized as "mentalistic" generally European, looked for explanations of language in terms that appealed to the purposes, beliefs and expectations of language users.

In pursuit of their aim "to speak precisely about language or not at all", the North American linguists attempted in their own words "to make our linguistics a kind of mathematics". In answer to the question whether they had succeeded in mathematizing linguistic descriptions, Joss, one of the most eminent of the Neo-Bloomfieldians, replied in the early 1950s "Well, not quite, but our science is still young. In its mathematical phase it's just a quarter of a century old."

Nevertheless, even if they had not quite succeeded, the North American structuralists undoubtedly felt that among the human sciences, linguistics had a clear lead. Joss once claimed: "But of all the sciences and neo-sciences which deal with human behaviour, linguistics is the only one which is in a fair way to becoming completely mathematical, and the other social sciences are already beginning to imitate the strict methods of the linguists."

If the North American linguists before Chomsky wanted to mathematize linguistics, then it was clearly not - as is commonly thought - simply in introducing mathematics into linguistics that Chomsky was original, but rather the kind of mathematics he advocated. However, neither Chomsky nor his predecessors appear to have seen was that to reduce something as complex and diverse as language to a mathematical form requires excluding so many important facets as to make the resulting formulation barren of insight into the workings of language.

The North American linguists' view of the paramount importance of objective description naturally had a profound effect both on which aspects of language they singled out for analysis and how they proceeded. Most commonly they took a text or corpus of material, often a body of utterances from an unknown or unfamiliar language that had been recorded and initially transcribed on field trips. A good deal of their primary concern was the indigenous languages of their own continent. As languages of their own continent. As languages of their own continent. As languages of their own continent.

The primary reason they concentrated on form to the virtual exclusion of meaning was that they recognized that meaning was much more difficult to mathematize than form, much more open to idiosyncratic interpretation. Moreover, it was not as directly observable as form was. Interestingly, given the popular belief



Chomsky: founder of a science which is wrapped in its own disputes

that Chomsky brought about a revolution in linguistics, his views on the role of meaning in linguistic analysis were not initially very different from those of earlier North American linguists. He believed that not only was meaning "a notoriously difficult notion to pin down", but also that if it could be shown to be central to linguistic analysis, "a serious blow" would be "struck at the foundations of linguistic theory".

Looked at in a wider context, it is not difficult to see parallels between the views on science of the North American linguists and those associated with various forms of positivism. For many positivists what was unacceptable as science was the untestable. They thus laid a great deal of emphasis upon methods of logical verification. It was a principle of logical positivism for a time that the meaning of a statement lay in the methods of its verification. For the North American linguists who might say that preceded Chomsky we might say that the value of a linguistic statement lay in the soundness of the methods that had determined it.

Chomsky entered the linguistic scene against a background of a linguistics committed to producing objective descriptions of the formal arrangements of certain recurrent features in the phonology, morphology and syntax of languages. Chomsky's very different views on what a scientific linguistics should be, are complex and developed at length in his first major work: *The Logical Structure of Linguistic Theory*.

Here we can only pick out two of its main themes: first Chomsky's conviction that linguistic theories should aim not simply to describe characteristics of language but to explain them - and second that a properly explanatory linguistics should take the form of axiomatic logic. While a move to a more explanatory linguistics would not in itself have fragmented the field, what has proved divisive has been Chomsky's insistence on the appropriateness of axiomatic theories to explain the workings of language.

More specifically he argued that a linguistic theory should be modelled in part upon the deductively formulated rule systems or grammars developed by logicians to generate the "sentences" of formal languages. Typically a formal language consists of a precisely specifiable set of basic expressions, its alphabet, and a number of syntactic rules for the manipulation and combination of these expressions. In finite set of symbols, an alphabet is a finite set of symbols of the language is a string of finite length composed of symbols of the language combined in ways that accord with the syntax of the language.

The rules which generate the sentences of such a language can be referred to as the grammar of the language. In mathematical terms

such grammars can be finite systems with infinite output.

In taking over this type of mathematics into linguistics Chomsky recognized such grammars were too simple to capture the complexities of the syntax of natural languages. Formally what was initially exciting about Chomsky's work was the development of a different additional rule system, transformational rules, to formalize structural relations among sentence types.

The reason that Chomsky was at first attracted to grammars of this kind was that they appeared to offer a solution to a specific problem he was working on. It has now been largely forgotten that Chomsky's initial contribution to linguistics arose out of his attempts to provide a firmer theoretical basis for the kind of grammars the North American linguists were already devising. His own earliest linguistic work was an attempt at a structuralist grammar of Hebrew. Chomsky set about the task in the orthodox way using an informal and applying the analytical procedures developed by the earlier North American linguists. The results of these attempts were in Chomsky's own words "rather dull and unsatisfying". As he described it, merely rearranging or restating the data did not explain anything. His originality lay in seeing that a grammar in the form of deductively formulated theory is capable of generating or producing sentences, strictly structures, not found in the material being analysed. These new structures, if accepted by native speakers as possible utterances of the language, could be taken as successful predictions and thus go some way to being an explanation of what counts as grammatical or well-formed in the language under consideration.

In seeking a linguistic theory with explanatory force Chomsky must have appeared to many of his contemporaries to be moving directly against the scientific temper of the time. The prevailing attitude towards North American linguistics towards explanation is generally thought to be expressed by observations such as the following: "... we try to describe precisely... we do not try to explain. Anything in our description that sounds like explanation is simply loose talk... and is not to be considered part of linguistic theory." And "children want explanations, and there is a child in each of us; descriptivism makes a virtue of not pampering that child."

Gradually the private hobby became his major linguistic work. He came to believe that constructing grammars or rule systems in the form of deductively formulated theory enabled light to be shed upon aspects of native speakers' knowledge of their language. Subsequently he went on to raise the most fundamental question of how the rule systems it was believed native speakers had internalized were acquired.

The reasons for finding deductively formulated theory inappropriate to explain even limited aspects of language acquisition and use are complex. In suggesting that deductively formulated theories are not appropriate to linguistics we are not of course saying they have not proved illuminating in some of the physical sciences. Indeed in certain branches of physics they have been spectacularly successful. Whatever the success of this type of theory elsewhere however, in the case of linguistics it has imposed upon Chomsky very severe restrictions. Essentially it has meant that the only aspects of language that could be included within the scope of the "explanatory" theory were those that appeared to be sufficiently well defined to be expressible in terms of the type of formal notation that axiomatized theories requires. The result inevitably was an emphasis on linguistic form. Meaning was excluded - initially at least - from the domain of the theory. The need for formal rigour further ruled out any reference to language users' knowledge and intentions, beliefs and expectations. The attraction to linguists of the more sophisticated view of science Chomsky was introducing appears to have largely blinded them to the narrowness of the new approach.

Once however Chomsky had decided to work with deductively formulated theory, he had no choice but to take a restricted view of his subject matter. What then became crucial to the development of the field was that a particular type of exploratory theory came to dictate the kind of problem that was seen as important. Put crudely, instead of having problems and looking for explanations, we had a very specific type of explanatory theory looking for problems. There was little point in looking at semantics since Chomsky, like the North American descriptivists, believed that meaning was too vague and obscure to provide the restricted and well-defined primitives a formalized theory required. The small set of traditional syntactic categories on the other hand appeared readily incorporable into a formalized theory.

On this interpretation what accounts for the predominance of linguistic form in Chomsky's early theories was that it lent itself to formalization. It was not that Chomsky had found as a result of insight and investigation that knowledge of syntactic form independent of meaning was of striking relevance to language understanding or production, or presented special problems of description that a formalized theory might help to solve. On the contrary, he picked out for inclusion within his explanatory theory just those aspects of language that lent themselves to expression within the terms of a formal theory. Other aspects, aspects more central to language in use such as meaning, intonation, user expectations, being irreducible to the required primitives, could not be part of a formal theory of the type Chomsky was elaborating. The fact that the domain of linguistic theory was sharply narrowed in this way came to matter a great deal because of the extraordinary claims Chomsky was eventually to make, despite the limitations of the theory, for the psychological not merely formal, validity of his model of explanation.

None of this would have mattered so much if empirical support had been forthcoming for, say, his views of the independence of judgments of grammatical form from those of meaning. But it is notorious in the field that testing Chomsky's models has always relied solely upon the judgments of native speakers on its output. There has never been a theory-independent procedure outside the appeal to native speaker agreement for testing the validity of Chomskyan models.

Not surprisingly, this has resulted in considerable disagreement among linguists - sometimes serious and often in crucial cases - on the acceptability of the output of models developed in the Chomskyan tradition. Such disagreement has served to

continued on page 14

Non-scientists expect science to give definitive answers. Somewhere, in the midst of each problem, there must be an instrument, a definitive piece of hardware, which will light up to indicate "Yes" or "No" to a question? Reality shows scientific judgments on complex issues to result from a wide-ranging analysis over several disciplines. The weight given to the results from these different disciplines is a complex judgment in itself. Given these variables, scientists can take up different positions on contentious issues, to the dismay and confusion of non-scientists.

Lead in the environment is a typical example of a controversy which has been in the public arena more extensively and longer than most. Add to the controversy a very real interest in the economic benefits gained, to be balanced against probable diffuse human damage, then the least controversy is very important to all of us.

We should not fall into the opposing traps, which some readily do, of either assuming that lead has been only recently introduced by the rapacious oil companies or, alternatively, that recent concern about lead is unfounded. The fact is that lead has been a constant, widespread and sometimes useful material to civilization.

Each year three to four million tons of lead are produced in the world, with Britain contributing about a quarter of a million tons. Recycling accounts for about 14 per cent worldwide, probably more in this country with its well-established scrap industry. Major uses in the western world are batteries (50 per cent), lead tetraethyl petrol additives relatively constant at 10 per cent, with cable covering and pipe/sheet uses decreasing sharply over the last 20 years.

The last is a classical case of material substitution by plastics, whereas there is no medium term alternative for the lead-acid battery. Lead production and manufacturing into products releases lead into the environment, the amounts being tightly controlled by both local and national governments. Significant lead levels can occur close to a main source of lead, either next to a main road or to a lead works. The latter sources are known and carefully monitored.

There is a long and well-documented history of abnormal human blood levels resulting from lead lined/glazed cooking pots and water supplied through lead pipes. Occasional cases still occur of lead glaze on *chic* cooking pots imported from obscure sources. The lead content of food is continually monitored, particularly imported canned food.

Lead in water arises from the gentle solvent action of soft water on lead pipes and joints, well known in Glasgow, Manchester and other areas. When this is known, the water can be treated to reduce substantially the lead levels in the water. Where this has been done, as in Ayr, significant decreases in adult blood lead levels are already being observed. Food and drink has always contained lead at very low levels and still does. The total amount of lead ingested by people arises from food, drink and air, the relative importance of each route being very variable.

The lead controversy centres on lead in petrol. Post-1920 engines began to increase in efficiency by increasing the compression ratio, roughly the ratio of volumes when the piston is at the bottom and top of its stroke. Such engines rapidly ran into problems of "knock" or pre-ignition of the air/fuel mixture which should burn smoothly. The result is lost efficiency and mechanical damage from the explosion. Many additives were tried but only lead tetra-alkyls had the necessary qualities of improving the resistance of petrol to knock (raising the octane number) for a very small amount of additive.

Other compounds are either too flammable or have to be added in large amounts, thus



Leading questions

Malcolm Fox on why we should stop worrying about lead in petrol and switch to diesel

altering the properties of the fuel. Alcohols, as one alternative, need to be added to high percentages and give water absorption/freezing problems and also carburation problems. The general trend towards higher efficiencies in petrol engines would only be slightly set back by moving to lead-free petrol, and already British car manufacturers produce engines to run on this fuel, as do most other manufacturers in other countries. There is now an enormous amount of experience to show that modern engines can run reliably on unleaded petrol.

Lead in petrol has been controlled by national agreement, and now legislation to 0.4g/mlitre, but it is proposed to reduce it to 0.15g/mlitre by the end of 1985, to reach the level already achieved by West Germany. The actual levels of lead in UK petrol appear to vary - some may be as low as 0.25g/mlitre, giving a much lower percentage reduction in due course.

The question is how much human ingested lead comes from lead blown into the atmosphere from the exhaust pipes of petrol vehicles. The Lawther report concluded that only 10-20 per cent of body lead came from leaded petrol, and the lower limit is the conventional wisdom propounded by the Government. But as and after Lawther was reporting, further extensive work came to fruition which seriously questions the previous conclusions.

First, in the United States, unleaded petrol was introduced so as to maintain the effectiveness of the catalytic converters fitted to reduce other air pollutants. As the population of cars requiring unleaded fuel has increased, then the sale of lead additives has declined, by 55 per cent from 1976 to 1980. Over the same period the blood lead levels of American citizens averaged over all classes of citizens has de-

clined by 37 per cent. Americans, on average, now have a substantially lower level of blood lead than people in the UK or EEC.

A long and complex experiment in the Turin region of Italy used (non-radioactive) isotopically labelled lead to show that at least 30 per cent of blood lead came from petrol.

Given these results, it is clear that the multiple routes of petrol lead ingestion were underestimated by Lawther. Lead in air may be breathed and retained, or may be deposited as dust, for adhesion to fingers and thus ingested, or on food.

It is interesting to note how quickly the water authority for Ayr reacted when the recent EEC survey showed young mothers had enhanced blood levels from the (plumbo-solvent) soft water coming through lead pipes. The water is now treated such that water lead levels are less and the female blood lead levels are already showing a decrease.

Lead at high blood levels is a well-documented neuro-toxin, some people showing recognizable effects above 70-80µg/100mls blood. That is not contentious. What is causing concern is the possibility of more subtle effects on health at considerably lower levels of exposure, particularly at "sub-clinical" levels of injury to children. Slight but irretrievable damage to brain development is said to result - very difficult to detect, and second, to quantify. To do this properly a measure of body lead must be accurately obtained - either venous blood, not capillary blood from a scratch as this probably contaminated by skin lead dust or by lead in teeth. Teachers must evaluate behavioural and educational difficulties, these perhaps being affected by parental background, social and economic status.

Many studies have serious faults and weaknesses in methodology - it is surprising how

much funding has been wasted on poor work. Nevertheless, the Needleman multidisciplinary study is now accepted as the most authoritative, using lead in the teeth of over 3,000 school children in inner area suburbs of Greater Boston, Massachusetts. We have to accept that lead in teeth is a reliable guide to body lead levels.

On 11 educational difficulties independently reported by the teachers of these children, a clear dose-response relationship was established for being distractible, persistent, work independently, disorganization, impulsivity, frustration, daydreaming, ability to follow simple and sequence directions and general functioning, but not for hyperactivity.

A smaller group examined in detail compared 58 children of over 20µg/m tooth lead with 100 children of tooth lead less than 100µg/m. "Parental factors" were assessed and allowed for statistically by co-variance. IQ scores for the higher lead children were 102.1 and for low lead children 106.6, the difference of 4.5 being statistically significant at the 3 per cent limit. These results are broadly replicated by the work of Dr Yule and Dr Lansdown from a study in the London borough of Greenwich. A difference of seven IQ points was found between the highest and lowest blood lead groupings.

From the complex issues involved, it is evident that completely conclusive evidence will not be forthcoming. However, there are strong indications that a subclinical effect of lead upon children's IQ scores does exist and that one of the main sources of human body lead comes from leaded petrol. What happens now is an interesting aspect of our society's ability to deal with complex issues.

Inevitably, the lead tetra-alkyl industry, Associated Ocel, and the pressure group, CLEAR, have taken up opposing positions. Ocel has done well to export its products and is a successful industry in an area of terrible unemployment, the North-West of England. In as much as they were strongly supported by the Government of the day to establish and expand, then industrial alternatives and opportunities should be offered to that company when the present Government drastically reduces sales of Ocel's main product, as it inevitably will.

On the other hand, over 50 years ago we went for a technical "fix" to improve the use of petrol with long-term consequences that could not be foreseen at the time. The cost of non-lead, two-star, petrol is said by petrol companies to be only a few pence more than leaded petrol. Can we accept the cost of buying back the technical fix route adopted over 50 years ago in the interest of inner urban areas children, at least?

It would not be disruptive for home car producers to make home market cars to run on unleaded fuel, as they make such engines for export. Most imported petrol vehicles are able to run on unleaded fuel, to comply with the regulations on petrol composition in their countries. An immediate reduction to 0.15g/mlitre lead for petrol used by existing cars would probably be un-noticed by the majority. All political parties accept the need for a reduction and eventual phasing out of lead in petrol, except the Government, who cannot hide behind the need for EEC harmonization because West Germany is already there.

But why should we be so hung up on petrol engines, leaded or unleaded, as the limits of our options? The small diesel engine, plain or turbo-charged, offers a considerably better utilization of oil resources as a major alternative. That would require the Treasury mandarins to understand the first law of thermodynamics, a problem beside which lead is reduced to insignificance!

The author teaches in the chemistry department at Leicester Polytechnic.

After Chomsky's revolution

and uniform linguistic knowledge. He called this body of tacit knowledge: competence. In this view, the key to a rational conception of language was to see it as an object possessing orderly hierarchical structure. Chomsky's view of what an explanatory linguistic theory should be precluded any such open-ended approach.

The result of the severe restrictions deductively formulated theory imposed upon Chomsky was that his theories are not, in any ordinary sense, theories of language at all. With hindsight, it has become easier to see that from the start Chomsky's devising meta-grammars and grammars for the description of aspects of linguistic form, particularly syntactic form. His most recent work continues in the same spirit.

Other linguists, however, reacting, possibly overreacting, to what they see as an exaggerated concern with formalized theory and dissatisfaction with the exclusion from linguistic

approach was outlined in a stimulating paper Uriel Weinreich was working on before his untimely death. His view was that the key to a rational conception of language was to see it as an object possessing orderly hierarchical structure. Chomsky's view of what an explanatory linguistic theory should be precluded any such open-ended approach.

The result of the severe restrictions deductively formulated theory imposed upon Chomsky was that his theories are not, in any ordinary sense, theories of language at all. With hindsight, it has become easier to see that from the start Chomsky's devising meta-grammars and grammars for the description of aspects of linguistic form, particularly syntactic form. His most recent work continues in the same spirit.

Other linguists, however, reacting, possibly overreacting, to what they see as an exaggerated concern with formalized theory and dissatisfaction with the exclusion from linguistic

theories of much that is central to language production and understanding, have begun to move off in different and unrelated directions. The emergence of pragmatics and the revived interest in typology are clear illustrations of the centrifugal forces at work in contemporary linguistics. But this fragmenting of the field leaves the deeper causes of the dissatisfaction untouched. Pragmatics, for example, appears to assume the existence of adequate formal models for syntax and semantics, and takes its task to be supplementing their limitations. Thus its domain embraces deictic or indexical expression, speech acts, presuppositions, scraps from the formalists' table.

The deeper causes of the current dissatisfaction and disarray lie we have suggested in the profound inappropriateness of Chomsky's model of explanation to the study of language. Until this nettle is grasped, the uneasy discontent and the consequent confusions about aims and methods will remain. There is an

urgent need for a new approach to problems of explanation in linguistics; one that does not seriously distort the subject matter to fit the theory, and is sufficiently flexible to take in the role that users' purposes, expectations, beliefs and experiences play in language in action. Limited but satisfying explanations for the workings of language are more likely to emerge from a problem-based approach that examines questions of language in use in relation to the supportive non-linguistic frameworks which bring to language. We anticipate that explanation in linguistics will be teleological rather than the reductive in character. One effect of such a shift in the mode of explanation would undoubtedly be that linguistics could no longer compare itself with the more sophisticated of the physical sciences. It might however end the long divergence of linguistics from its subject matter, and allow the field, however slowly, to begin to converge with other related fields upon the study of language in operation.

The authors have also written *Understanding Language, published this autumn by Macmillan.*

BOOKS

Plotting the U-curves



Professor R. C. O. Matthews

Sidney Pollard

Economic Growth 1856-1973
R. C. O. Matthews, C. H.
Hodgson and J. C. Odling-Smee
Camden Press: Oxford University
Pp. 437.50
ISBN 0 19 828453 5

There has now grown up a whole generation which sees in economic growth the most convenient and complete measure of economic success. The element that can make all these desirable things possible, however, is also less easily confused than a single ratio can capture manifold experiences of past centuries, have not been quite so eager to embrace the new shorthand, they too have bowed in recent years to the pressure of the economists. Besides, the accumulation of increasingly reliable statistics has moved many earlier misgivings.

All that is best in this field has been assembled in a monumental and authoritative volume, covering well over a century of time-span for which adequate data may be said to exist. This book is certainly becoming the quarry to which future scholars will draw for materials. But it is less clear how far it has, on its own terms and its own right, achieved the aim set by its authors.

The task might have been tackled in several ways. The authors could have made an early decision to set their sights within the context of British history rather than foreign comparison. This would lead them to emphasize some causes and relationships rather than others and, for a post-war period, would tend to provide explanations for a growth rate rather than explanations as to why it was so low (by comparison with other similar countries). Fortunately they did not in practice keep resolutely to their resolution, but it could have been justified without difficulty by the aim to search for the dynamic of British economic growth.

Less happy, perhaps, was the choice of a rigorous economic, rather than a social and historical approach. This is a book in which macroeconomic thinking takes precedence. There is no human beings anywhere in it, yet abstract categories like "labour" and "investment", that can be used systematically as being homogeneous, completely interchangeable at the margin and reacting simply and predictably to economic stimuli. The only variations recognized are such rather mechanical ones as economies of scale or diminishing returns, or sharp sub-divisions like male and female labour, part-timers or full-timers. There are scarcely even industries in this study, except for the purpose of testing whether any element of growth was to be accounted for by structural shifts between them; and sectors or regions have similarly been practically excluded.

Since the categories in this book are only economic signals, tradition may not be their decisions, nor politics, nor power, indiosyncrasy, nor the search for comfort. The nearest we get to any of these is in the briefest of references to the attitudes of labour and the quality of management. Even elements like entrepreneurial failure or technological progress are treated as exogenous, outside the mesh of economic relationships examined.

There is a rigid temporal demarcation: four peacetime phases distinguished, 1856-73, 1873-1914, 1914-37 and 1937-73, with the "war-time" periods of 1913-24 and 1937-51. In addition the last two peacetime phases 1951-73 is for certain purposes further sub-divided into five short cycles. Virtually the whole of the discussion takes place on the basis of annual compound percentage growth rates within these chronological

sections. The topics too are rigorously defined. There are two variable inputs, capital and labour; and the influence of foreign trade and payments, treated separately; and there is the outcome, in terms of production/productivity. Thus we have a firm grid of six periods and four topics, within which all the relationships are systematically explored.

Given the superlative skill of the authors, a logically satisfactory and complete treatment can be built up on this basis. But it will also put an impossible strain on the reader. For apart from the rather laudable attempt to put even complex inter-relationships into English rather than into algebra, which makes for difficult reading, and the rather less laudable jargon with which the book abounds, the dogged pursuit of the relationship of each period with all, soon becomes intolerably repetitive. After the first time round, there are no surprises and scarcely anything new except in minor detail. It is as if a building were drawn, not only in plan and elevation, but also in a succession of elevations for every frontage, with plans for each floor and diagrams of the diagonal cross-sections to boot. The result is not so much a book to read and digest, as a book in which to look things up, and this is a pity.

Finally, three more grumbles. One is that in spite of the vast apparatus of statistics and econometrics, when it comes down to actual decisions (for example, as to whether or not in Victorian Britain) all that we have in the end is an impressionistic snap judgment, expressed in vague non-numerate terms, just like those found among the more traditional historians. The second is the deplorable tendency to hold fast to figures, once they are anchored and integrated, even if they produce patently absurd results. Thus there is no hint of a doubt on calculations which seem to show that in numerous industries (quite apart from coalmining) there was a fall in productivity in 1873-1913, despite the obviously improving technology and advantages of scale. And thirdly, the dogma of economic theory are taken altogether too seriously. Thus, typically, it is assumed that the relative wages of service workers as against adults must reflect accurately the level of their relative output.

What we have here above all is the basic structure and the movements of the rate of growth of the British economy, presented in a form which is unlikely to be changed in the foreseeable future. There is, further, an immense and most carefully handled body of data, a cornucopia of the voluminous relevant literature, and an exhaustive study of each operative economic relationship, illuminated by the compelling logic of the argument. Like so much else from Matthews' pen, this work also is a sheer intellectual pleasure to read for its complexity and yet so convincing reasoning. It is in-hitherto contentious issues. It in-hitherto contentious issues. It in-hitherto contentious issues.

For many purposes, and above all for a consideration of productivity, what matters however is not output per head, but output per worker employed or, better still, per labour input, taking into account the type and quality of labour, and the hours worked. The treatment of this extremely thorny subject is among the most satisfying parts of this study, which calculates labour quality and hours worked with unusual consistency and precision before attempting to measure labour input, but it still cannot eliminate more than a fraction of the problems arising. Thus the reduction in the standard weekly hours worked occurred in each decade after long decades of stability in each phase, in 1871-73, in 1919-20 and in the late 1940s, and as it was followed every time by a drop in the drop in put much less than the drop in hours, the conclusion must be that workers reacted to the shorter working week, at least temporarily, with greater labour intensity. The intensification of labour, in turn (itself an ambiguous notion) ought to be embodied in the discussion for which such comparisons are made, such as

the "improvement" of the standard of living, changes in the efficiency of capital, and so on, but in practice cannot be calculated at all.

In addition to this unknowable variable of labour intensity, labour productivity also depends on the quantity and quality of the equipment supplied to the workers - in other words, on the capital input. This, at least in monetary terms, can be measured relatively easily. Using the formulae favoured by economic theory (and assuming the quantity of land, the third factor of production, to remain constant throughout), it is possible not only to measure the growth or decline in the input of each of the factors, capital and labour, into the productive process separately, but to combine them as changes in total factor input (TFI) by weighting the growth rate of each factor by its share of input. The growth of TFI can then be compared with the growth in total output, and in the degree that the latter exceeds the former, and that there has been a change in output not due to changes in the quantity of capital plus labour, there has been growth in total factor productivity (TFP). The growth of productivity thus defined over time is a central theme of the book.

In this type of approach, where each input component, capital and labour, is made to "account for" a certain proportion of the growth, it is tempting to treat this as the first link in a chain of causation, by saying that so much additional capital or labour "caused" so much growth. However, tread curiously asymmetrically, here as elsewhere in the rest of the literature. While allowance is made for the changed "quality" of the labour input, as for example by training, or by numbers of males as against females, no such allowance is made for changes in the quality (or utilization) of capital, apart from the structural shift between industries or sectors, even though these changes are normally the largest element in the growth of productivity.

It is technical progress, incorporated in the new capital of possibly equal real cost as compared with the older capital replaced, which generally is responsible for sustained rises in productivity; yet technical progress, capital organization, fuller use of capital, and so on, are treated, in the theory, and in most studies, as something separate from the capital which incorporates them. Clearly, it makes for easy mathematics to add up additional labour and capital, subtract these from total growth, and call the rest a "residual" or rise in productivity, but it is not so simple, on, but it obscures the real relationships. This study, to its credit, recognizes the problem, and admits that a true evaluation of all the innovations and improvements, so that, including the improved labour input, the whole of the output growth would be accounted for and would leaving no thing to be explained by a separate "productivity" rise; but it is unable to carry this out in practice. TFP, separate from and additional to TPI, dominates the discussion.

None of this is entirely new, nor do the actual annual growth rates adopted and the U-curve itself differ greatly from those generally accepted. This is not altogether surprising, for much of the standard work has been done in the past by the authors themselves. While it is extremely useful to have it all assembled and commented on in a single volume, what is particularly valuable is the extension into new details and correlations. A few random examples may whet the appetite.

The authors are clearly impressed with the significance of the decline in profits in the period 1873-1913. They attribute this in part to capital-saving inventions and an elasticity of substitution between labour and capital of less than unity, but behind it lurks a quasi-Luxemburg doctrine of capital surplus unable to find investment

opportunities at home. In the face of much historical opinion to the contrary, they hold that the large capital exports of the period did not cause manufactures at home to go short, but on the contrary relieved the pressure on British manufactures abroad. More capital devoted to home investment, they muse, would merely have led to even more diminished returns. Yet this view fits ill with their polemic against the Webbs, in which they imply a labour surplus, for that would mean that there was simultaneously both too much capital and too much labour. Nor does it accord with the patent technological backwardness of Britain of too many sectors of the economy. For the similar drastic fall in profits after the Second World War, at a much higher absolute level of productivity, the causes are given as: foreign competition, strong labour militancy, government price restraints and historic pricing in the face of inflation. Elsewhere, the increase of the employers' insurance contributions is rightly identified as a main cause of the rise in labour's share of the national income in that period: it is, of course, a major aspect of the fundamental switch in the role of state, from an organ in the interest of the bourgeoisie in Marx's day to a vast redistributive organ in favour of labour in ours. Those who are weak in the economic market place have learnt to use the ballot box to redress the balance.

For the interwar years, the Dowie thesis that it was the undue wage rises of 1919-20 which caused the high unemployment of the 1920s is (perhaps not surprisingly in the age of monetarism) adopted with enthusiasm. Thereafter, however, investment was said to have stayed low; if more of it had been applied to manufacturing, output might have grown faster still, though output growth was massive enough. It coincided with little investment, for in the face of heavy unemployment it was sensible to continue labour-intensive methods, and in the circumstances house-building was an excellent example of "crowding-in" in the 1930s.

Foreign trade receives much attention. Fluctuations in its impact on manufacturing growth were due, the authors believe, less to changes in foreign trade than to changes in home absorption. The total effect was positive in 1856-73, slightly negative in 1873-1914 and disastrous negative until 1937. It was highly positive once more on growth in 1937-54, but then most negative of all in 1963-72 - and thereafter.

In the years after 1951, the authors are clearly right to see Great Britain held back by supply constraints. Once the problem is seen as a failure of productivity, it is less important, a matter of "secondary interest" to argue about the precise forms taken by Britain's lack of competitiveness: excessive prices, poor quality, or slow delivery. The constraint, in the end, comes down to a shortage of labour, and not the absence of up-to-date equipment, but it is not at all clear why it should be easier for other countries to have equipped a growing labour force with efficient capital than for Britain to have similarly equipped an almost stationary labour force. The typical British investment failure was surely to have gone for Lamfalussy's "defensive" type, patching and saving, so that the diminishing capital returns which occurred on that basis are no guide to the possible returns that might have been achieved as a result of massive re-equipment, as elsewhere.

Enough has been said, perhaps, to show how far this volume ranges from its central theme of the overall growth rate, and how stimulating its approach may be. It is not an economic history of Britain, but it is an indispensable source for all those interested in the subject.

Sidney Pollard's latest book is "The Wasting of the British Economy".

BOOKS

In other words?

The Bronze Horseman: selected poems of Alexander Pushkin translated and introduced by D. M. Thomas
Secker & Warburg, £8.95 and Penguin, £2.95
ISBN 0 436 38845 6 and 14 042309 5
Mozart and Sallieri: the little tragedies by Alexander Pushkin translated by Antony Wood
Angel Books, (distributed by Ken Dickinson), £5.95 and £2.95
ISBN 0 946162 02 6 and 00 X
I Have Come to You to Greet You: selected poems by Afanasy Fet translated by James Greene
Angel Books, (distributed by Ken Dickinson), £5.85 and £2.95
ISBN 0 946162 03 4 and 01 8

Conscious, perhaps, of their position on the periphery of European civilization, Russian poets from Zhukovsky onwards established a tradition of translation which combined high quality with a deep respect for the original work. Poetry, indeed, was one of the main factors which contributed towards the psychological "westernization" of Russian consciousness. Understandably, there is no such continuous tradition in English poetry: the average reader would be hard put to it to recall any English literary figure noteworthy for his translations - Fitzgerald, perhaps, excepted.

In recent years, however, Russian poets have come to be accepted by English literati, not as occasional exotic phenomena on the fringes of literary Europe but as an integral part of a common European cultural heritage. Translations of major Russian poets of this century, like Mandelstam, Pasternak and Akhmatova, have appeared with increasing frequency. External events, notably Nadezhda Mandelstam's biographical masterpiece, have no doubt accelerated the process. The publication of these three books show that interest is now spreading to the nineteenth-century Russian tradition.

By now there is enough material for the English reader to recognize the prevailing attitude among translators towards the general principles of their craft. I myself share the view of Pushkin's great contemporary, Chudakov, expressed in a letter to him, that poets all over the world, from Valmiki, the bard of the Ramayana, to Byron, repeat, in effect, one and the same thing. I consider therefore, that in translating poetry conveying how the song is sung is at least as important as the burden of the song itself. But this is exactly what modern translators proclaim to be impossible.

Instead, we find the defeatist attitude that rhymed translation is not feasible; rhyme must be "subdued" in the interests of sense and something elusive called "the spirit of the verse". It has become a kind of regretful orthodoxy among present-day translators: one suspects here ineptly masquerading as necessity (Sir Charles Johnstone's *Eugenie Onegin*, praised by D. M. Thomas himself in his introduction, is proof of the contrary thesis). As a result we have, instead of poetry, a prose rendering of the original, all too often marred by misinterpretations which cannot be ascribed to a desire to retain the rhyme or rhythm of the parent work. The mysterious line dividing prose from poetry becomes increasingly hard to detect.

In this regard, D. M. Thomas's book is very instructive. In his introduction he remarks that literal fidelity in every line would be "impossible" in rhyming tetrameters and proposes that they should be replaced by the "natural and natural English" metre of blank verse. Whether blank verse is indeed the appropriate metre for translating verse of the Pushkin era is debatable, coinciding as it did with that of Keats, Shelley and Byron, when

rhymed verse was as natural in Britain as in Russia, employed the same metres and, one may be sure, produced the same effects on the reader.

Mr Thomas, in fact, is most successful when he flouts the principle he has proclaimed and gives us a rhymed version, or one which retains the original rhythm. I have in mind such lyrics as "19 October", "Demons", and the excellent "Count Nulin", where in spite of deviations from "literal fidelity in every line", he manages to be faithful to both sense and spirit. He sees, as it were, the poem as a whole, and is thus able to approach it with an exhilarating freedom, even going so far as to insert metaphors absent in the original while still retaining its essential integrity. Mr Thomas demonstrates here the true skill of the translator.

Regrettably, these real achievements are overshadowed by the rest of the translations in the book. All too often exquisite lyrics are reduced to prosaic banality, as in the case of "To Anna Kern", for Russians an unsurpassed love lyric. There is also a tendency to introduce explicit sexual references where Pushkin has either none at all, or some delicate erotic hint. In "The Prophet", Pushkin says of the six-winged seraph (whose hand is said to be bloody):

And he bent down towards my lips
and tore out my sinful tongue.
Thomas finds it necessary to elaborate:

And, like a lover kissing me,
He rooted out this tongue of mine.

Fluent in lies and vanity
The most puzzling feature of the collection, however, is Mr Thomas's concept of blank verse in practice. This is a passage from Pushkin's "Winter. What shall we do in the country?", supposedly translated into blank verse: Pushkin questions a servant:

Is it warm? Has the snow-
storm died down?
Is there powder-snow on the
ground, or not? And can I leave
My bed for the saddle, or would it
be better

To browse through my neighbour's
old journals till dinner?
It is worth comparing this with John Fennell's prose translation in the 1964 edition of Pushkin's selected verse:

... is it warm? Has the snow-
storm died down? Is there powder-
snow upon the ground or not?
And can I leave my bed for the
saddle, or would it be better to
browse through my neighbour's
old journals till dinner time?
Indeed, one could juxtapose whole passages with Professor Fennell's prose versions and be struck by the word for word similarity. This is especially true of a number of the lyric poems as well as *The Bronze Horseman* and *Mozart and Sallieri*. Is the reader to suppose that prose arranged vertically in lines becomes *ipso facto* blank verse? Or even poetry?

Antony Wood's translations of Pushkin's *Little Tragedies* includes *Mozart and Sallieri* (originally in blank verse), thus providing an illuminating comparison in translation procedure. Wood retains Pushkin's metre and gives a felicitous rendering which reproduces the flowing grace of the original. Thomas, on the other hand, is forced by the prose translation he relies on to alter the metre, producing a hurried line which is rather difficult to say. He misses, in other words, an opportunity to display his virtuosity in the "national" English verse form.

Here is Wood:
Justice, they say, does not exist on earth:
But justice won't be found in heaven either.
That's plain as any simple scale to me.

Now Thomas:
Men say there is no justice on earth
I say there's none in heaven either.
That's plain to me as a simple scale.

In "The Stone Guest", oddly enough, Thomas chooses to indulge in jaunty verification, when Pushkin used blank verse! Wood is faithful to Pushkin's metre as well as to the "sense and spirit" of the verse throughout these admirable versions. Despite my reservations about Thomas's approach to his task, both



The *Memoirs of Leonid Pasternak*, first published in the Soviet Union in 1975, are now available in an English translation from Quartet Books at £12.95. The book's illustrations include this drawing of the artist's son Boris. An exhibition of Leonid Pasternak's work can be seen at the Museum of Modern Art in Oxford until January 26.

of these books are welcome additions to the small library of translations which give the reader an insight into the world of Russia's greatest poet. James Greene's idiosyncratic view of the translator's task is well displayed in his versions of Afanasy Fet. Some poems have been so altered as to suggest that Mr Greene might have been both more modest and more accurate if he had called these "variations" or better still "after Fet". Ignoring Fet's metre and eschewing rhyme, Greene loses much of the musicality of the poet: it is fair to say, however, that in some cases, he succeeds in conveying the main features of the original - the sweetness as well as the profundities which prompt Professor Gifford's prefatorial remark that modern Russian poetry "would not have been the same without Fet".

Diana Myers

Diana Myers is lecturer in Russian at the University of London School of Slavonic and East European Studies.

Weimar memories

Weimar Etudes
by Henry Pachter
Columbia University Press, \$25.90
ISBN 0 231 05360 6

Over recent years the 1920s in Germany have come to acquire among literary critics and historians of culture a modish popularity. Whether it be inflation, world economic recession, unemployment, the spread of political extremism and other maladies that seem to offer worrying parallels to events in our own day, the decade of Weimar yields only to that of National Socialism in the present hierarchy of phenomena for fascination and study.

Books on the Weimar Republic tend to divide into two types - the personal memoirs of those who lived through these years, and analytical studies - historical, political, sociological, cultural - by scholars concerned to reveal the motive forces beneath the chaos - historical, political, sociological, cultural - of the age.

This book is both. The late Henry Pachter, born in 1907 into a middle-class Jewish family in Berlin, was at school and university during the Weimar years, became a Communist, emigrated in the 1930s first to France, then to the USA, where he became professor of history and political science at the "pink" New York School for Social Research in New York. He died in 1980. The first and last sections of his book are autobiographical: at the one end his experiences and encounters during the 1920s - the tribulations of the Social Democrats, the uneasy relations between the intellectuals and the work-

ing class, the influence on earnest young men of liberals like Friedrich Meinecke, and fiercely independent Marxists like Karl Korsch - at the other, moving into a later period, notes on his years in exile. Between these two sets of reminiscences lie a dozen or so essays, all except one of them already published in strangely off-stream American journals, on Meinecke, Walter Rathenau, Heidegger, Berlin café culture, the Wandervogel movement and other subjects from the world of the Weimar Republic.

The satisfaction to be derived from a collection of chronologically scattered pieces seems to me to rest on the unremitting keenness and intensity of a consistently sensitive and well-informed mind. If, despite individual moments of pleasure and profit, one leaves this book with a sense of less than substantial reward, it may be because of the author's wavering between considered comment on matters of moment and sometimes almost trivial items of private experience. He calls on his personal encounters with Einstein, Brecht and Döblin but there is little to suggest a real contact of minds, nor do his rather haphazard autobiographical chapters have the eyewitness urgency of Zuckmayer's *Als wir's ein Stück von mir*, Stefan Zweig's *Die Welt von gestern*, Oskar Maria Graf's *Gelächter von aussen* and the accounts of other exiles.

On the figures and events of history and politics he is well-informed, though the information is familiar enough. In matters of literature, however - and he says virtually nothing about the other arts - he sometimes betrays a disturbingly undifferentiated view, and even unawareness. ("Herwarth Walden's friends and contributors included the gamut of Expressionist creators: Alfred Döblin, Heinrich Mann, Ferdinand Hardekopf, Alfred Mombert, Peter Hiller, Walter Mehring and Adolf Loos..." - is hardly a sentence, in substance or in style, that commands the reader's confidence. And to say of Ernst Jünger: "The death of his son in the war evoked less comment than his acquisition of a book bound in rare morocco leather" is to invoke a cruel perversion of what, all the more poignant for its steely terseness, Jünger actually did say: "Through his death he went infinitely further than I ever did.")

Walter Laqueur's foreword to the book is appropriately deferential. Indeed, Henry Pachter and the many thousands like him who were forced into exile in the 1930s have a categorical claim to our sympathy and respect. But it is perhaps not always the kindest of acts to give currency, subsequently, to their every thought on the events, philosophies and personalities in the background of their experience. Historical distance can be a cold dimension.

Ronald Taylor
Ronald Taylor is professor of German at the University of Sussex.

Poetic realism

Theodor Fontane: the major novels by Alan Bance
Cambridge University Press, £25.00
ISBN 0 521 24532 X

One of the most common collisions in the novel, and the one most suitable to it, is the conflict between the poetry of the heart and the prose of external conditions antagonistic to it.

Hegel's famous comment on the novel form points accurately to a central preoccupation of German realism in the nineteenth century: the desire to assert the value of the individual and of the apparently insignificant against the powerful and abstract forces of social organization. "Poetic realism", indeed, is the contentious label frequently attached to this type of narrative fiction, and the conventional view is that German realism remains stubbornly parochial until it achieves "European" status with the belated emergence of Theodor Fontane in the last decades of the century. Professor Bance's study, however, seeks to reveal the sources of Fontane's art in precisely such a conflict between "poetic" temperament and an unremittingly "prosaic" environment. He argues that Fontane did not abandon poetry, his first love, in particular the ballad (for which, ironically, he had little talent), but succeeded in intensifying and refining its direct emotional simplicity into narrative forms of powerful poise.

Fontane's own assertion of the need for a "Verklärung" ("transfiguration") of reality is thus seen in terms not of a flight into a conservative idyll or a gentle resignation in the face of the uncongenial materialism of Wilhelmine Germany, but rather as a constructive, if highly discreet, mode of opposition to the social and political pressures of a rapidly changing society.

This view has taken into account both isolated insights of earlier critics such as Thomas Mann (who owed a great deal to Fontane) and the extraordinary growth of Fontane studies over the past decade. The particular contribution to our understanding of Fontane's achievement lies in sensitive and closely argued analyses of the "major" works, *Effi Briest* (which he compares boldly with the early Balzac novel *Le Père Goriot*), *Die Poggenpuhls* and *Der Stechlin*. In particular, he has some illuminating things to say about Fontane's female characters. Women like Lene (in *Irungen Wirrungen*) and Effi Briest are seen as crucial to the struggle between poetry and prose; denied an active social engagement, they become founders of "quiet heroism" in a profoundly unheroic age. Put to the test, they reveal to an impressive degree the self-reliance and independent moral judgment which Fontane so admired and which set them apart from the men who so often appear as lukewarm prisoners of their social roles or, as in the ironic case of Jenny Triebel, guilty of mock heroics.

While making proper allowance for Fontane's complex ambivalence, his characteristic mixture of linguistic tact and emotional reticence, Bance establishes an interesting case for seeing these novels as a series of aesthetic "counter-structures" to the prevailing ideology. They invite the reader quietly to question the conformity and sacrifices demanded of the individual by society.

As more translations become available, this well-researched study will serve the general reader as an excellent introduction to Fontane's novels and his contribution to European fiction. Specialists may wish to invoke the poetic relevance of Fontane's insights which effectively underline the poetic relevance of Fontane to an age infinitely more prosaic and hostile to individual freedom than the one he observed with such a humane and critical eye.

Michael Butler

Dr Butler is senior lecturer in German at the University of Birmingham.

BOOKS

Evolution inside out

The Possible and the Actual
by Francis Jacob
University of Washington Press,
\$30.00 295 9588 X and
\$10.70 70671 4

Francis Jacob we have a rare combination: a great research biologist, a great research philosopher, and a great research writer. He is also a great research teacher. He is also a great research philosopher. He is also a great research writer.

The three essay-lectures in this book deal with a variety of themes in biology, "with genes and men, with aging and molecules", but all are centred on the unifying theory of evolutionary biology. They also deal with the history of biology, the history of the development of the theory of evolution, and the history of the development of the theory of evolution.

There are strong connections between physics and biology, particularly in the bridging science of molecular biology. It is the historical development of living things that sets them apart from other natural systems.

In contrast to most aspects of physics, biology incorporates time as one of its essential parameters. The arrow of time can indeed be found throughout the whole living world, which results from an evolution in time. It can also be found in every single organism, which changes incessantly during its life. The future and the past represent totally different directions. Every creature moves from birth to death.

Scientific explanations in biology necessarily incorporate this historical feature. Theories of evolution of development contain history as part of the machinery of causality. Every successive stage does not only follow its predecessor but is produced by it and depends on it. Many things seem possible in the complex living world, but the number of available options is limited, so that natural selection chooses what works only from what is permissible. Understanding these constraints is still the major task of biological research.

The unique feature of biological systems is that they contain an internal representation of themselves in the form of their genetic material. It is this that is passed on from generation to generation and not the organism itself. Heritable changes occur in the genes, but these cannot be read by the environment, which can only read organisms in which these genes have acted. Thus the witness to the Arkansas creationist trial who tried to evolve the evolution of life on geological grounds - "as unlikely as a kangaroo spontaneously reassembling a Boeing 747" - simply did not understand this construction paradigm. If a bag of elementary particles were suddenly to assemble into organisms, not have they been produced this way in evolution. They would be the image of *bricolage* used by Lacan in the essay "Evolutionary Lacan" - is appropriate and powerful.

Jacob also echoes and extends Darwin's arguments against the functional and structural perfection of living systems. It was this view which ultimately led Paley to the conclusion that objects such as the eye could not have been produced by chance. Evolution, Jacob argues, does not work on what already exists, but on what is transformed by a new function or combining several

systems to produce a more complex one. It involves cutting, joining, patching; leaks must be repaired as best as can be, and there is no going back to the drawing board because there isn't a drawing board.

Jacob emphasizes how biochemical novelty in enzymes is likely to have arisen by combinations between parts of pre-existing enzymes through recombination of pieces of genes. In each of us, the vast range of antibody molecules arises in this way, by random gene combinations in our lymphocytes followed by the natural selection of the appropriate cell population by the antigen. That is how we can form antibodies to many chemical groups including those not yet invented. The system is not a "knowledgeable" one employing design to win a lottery but an "ignorant" one with the ability to buy all the tickets; it can therefore not only win any particular lottery but all of them.

The same principles are likely to apply to more complex biological objects such as the morphological parts of animals, but the details are not yet so clear. To understand the evolution of hands or brains we need to know how they develop and how the genes participate in this process. Jacob does recognize the importance of development and I am sure he would agree with the addition of a question: "How is it built?" to the two which he says we can ask of any biological object: "How does it work?" and "How did it come about?"

The reader might wish to compare Jacob's exposition of the principles of evolution with that of his colleague, the late Jacques Monod, in his book *Chance and Necessity*. Monod introduced the confusing idea of the "objectivity" of Nature and has some difficulty with functional explanations; the word "teleonomy" does not appear in Jacob's book.

Jacques Monod would have found the concept of biologists distasteful - he remained a believer in some form of perfection or elegance in Nature, and quite often he sailed very close to the Platonist wind.

Perhaps in the end it was hard for Monod really to accept the Darwinian theory; his systematic French mind must have been offended by the messiness of the biological world and the Anglo-Saxon empiricism of natural selection. But then, he was intent to provide a philosophical alternative to both Marxism and the vitalism of Teilhard de Chardin. Jacob has no such pretensions. His wider reference is history and not philosophy; by letting the science speak for itself he provides us with a real insight into the world-view of the biologist.

Sydney Brenner

Sydney Brenner is director of the MRC Laboratory of Molecular Biology, Cambridge.

Relativist's tool kit

General Relativity: an Introduction to the theory of the gravitational field by Hans Stephani
Cambridge University Press, £25.00
ISBN 0 521 24008 5

It is always a pleasure to come across a well-written and carefully designed textbook on any subject. This is one. It introduces general relativity at the postgraduate level, assuming that the reader is already familiar with basic undergraduate theoretical physics. Although it is not the best book to go to for relativity's astrophysical applications, it concentrates on relativity itself, particularly on the mathematical methods the mastery of which makes the difference between simply "knowing" general relativity and being able to work in it.

Stephani writes in a clear style, concise but not abbreviated, a translation is beautifully good sense in it to the publishers' good sense in employing working relativists for the job. After a short section developing the relevance of the study of curvature to gravitational physics, the author gives a thorough introduction to differential geometry and to physics

in curved space-times. The approach is traditional: index-calculus rather than the more modern geometrical approach to be found in some recent books. Some prior acquaintance with tensor algebra would be a help for the student here, but after the opening sections the development is sound and well-presented.

There follows a section on Einstein's equations and fairly standard material on the Schwarzschild solution and particle motion. Then comes a discussion of gravitational waves, both linearized and exact, and the initial-value problem. Stephani then turns to one of his own specialities, the properties of exact solutions. This material is less common in textbooks, but the clear treatment here should be valuable to modern students. The book then black holes, collapse, and cosmology - before a final section on alternative gravitational theories, classical and quantum.

A feature of the book which I found helpful is that from time to time one comes across what one might describe as catalogues of useful things: special coordinate systems, types of transport along curves (parallel, Fermi-Walker, Lie), classifications of gravitational fields, simple exact solutions, cosmologies. All the tools in the working relativist's tool kit are neatly and systematically displayed.

The astrophysicist, on the other hand, will not easily digestible answers here. Other books, some already on the shelves and some in preparation, are designed for that. Stephani's book is designed, as the editor says, as a physicist's introduction to mainstream relativity, and in that it succeeds admirably.

Bernard Schutz

Bernard Schutz is reader in general relativity at University College, Cardiff.

Fossils with a future

Foraminifera
by John R. Haynes
Macmillan, £50.00
ISBN 0 333 28681 2

Despite the fact that geology is becoming more widely taught in schools, the general impression of palaeontology as an aesthetic and rarified pursuit still persists in the public mind. Too few people realize that every time they fill up the car with petrol, they are spending money on microfossils - not just because oil is often derived from microfossil hydrocarbons but also because microfossils help the petroleum geologist to interpret the stratigraphy.

For about fifty years, a single group of microfossils called the Foraminifera have been the mainstay of stratigraphic research in the quest for oil and they have rightfully held an important place in the training of palaeontologists. Haynes's new textbook is the first to focus on the Foraminifera alone since the publication of Cushman's *Foraminifera: their classification and economic use* in 1948.

Foraminifera are a class of tiny but often complex shells of unicellular protozoa, produced in prodigious quantities and accumulating in sediments from estuaries to the deep sea floors. Haynes's introductory chapter well captures the delight or even awe that they can engender: covering about half the ocean floor with ooze, they have also contributed much to such familiar rocks as the chalk cliffs and downs, the Egyptian pyramids and even the silvery sands of Sutherland. Foraminifera comprise more than 50 per cent of all Protozoa, including the largest individuals over 30 millimetres across; in fact they may account for about two and a half per cent of the animal kingdom. These little creatures encompass a greater variety of skeletal form than any other animal group and span nearly the whole of the animal fossil record with a complex evolutionary

and ecological history. No wonder, then, that they are the object of about 500 publications every year.

A comprehensive review of the Foraminifera has been badly needed for several reasons: information is accumulating at a rapid rate. Micro-palaeontology is gradually gaining a more prominent place in the teaching of undergraduate and graduate students, because of its practical value. The taxonomy of the group would benefit from a new look. And finally, there is scope for a fresh palaeobiological approach to foraminiferal evolution and ecology, to compensate for the severely practical and supportive role that has dominated their use so far. How then does Haynes's text measure up to these needs?

The work is comprehensive in its scope, with reviews of some 1500 references. Since the main groups of Foraminifera abound at different times and in different habitats, they make natural and practical chapter headings. The major criterion for taxonomic subdivision is wall composition and microstructure, although this results in a different scheme from that long established one of Loeblich and Tappan. Each of these systematic chapters is accompanied by useful reviews of morphology, evolution, biostratigraphy and ecology, finishing with synoptic descriptions of important genera and simple line drawings.

This arrangement will be popular with the majority of students and micro-palaeontologists, whose first concern is the taxonomy of a bewildering variety of forms, with a secondary need to know how to put them to good geological use. It has the disadvantage that the principles of biostratigraphy and palaeoecology do not come over very strongly. And it could be argued that the classification is suspect, with not enough allowance made for convergent evolution of wall composition and microstructure. For example, some of Haynes's Orders (for example, the Fusulinida, Rotalinida and Rotaliida) are regarded by others as merely grades through which diverse stocks of Foraminifera have evolved.

However, a weakness of the classification is the insufficient emphasis it gives to the distinction between non-septate and septate Foraminifera. The appearance of septa was followed by a major advance in lowered by a major advance in architectural form and variety, traceable in about seven distinct lineages, each of which could be subdivided naturally into non-septate and septate taxa of equivalent rank. But in Haynes's classification, the coiled non-septate groups range in status from ordinal down to superfamily rank and some of them are grouped with architecturally contrasting types (for example, the Archaeodiscacea and septate Colaniellacea - this is a bit like linking the Pantheon and the Post Office Tower because they are both built of concrete). The classification does make for good chapter headings and is easy to apply, but it is less acceptable to those with scepticism about the fidelity of wall character through time.

The Foraminifera have traditionally stimulated schools of evolutionary and taxonomic thought. For example, do they show progressive evolution or stasis? Were the first forms agglutinated or calcareous? Is coiling primitive or advanced? Do the juveniles exhibit recapitulation or paedogenesis? Should the taxon be lumped or split? These problems were prominent in the earlier texts of Galloway, Cushman and Glaesner but one gains no clear theorem of foraminiferal evolution from the new text. A good thing, one may say, being in mind the pitfalls.

The author is to be congratulated for producing a textbook that is both scholarly and readable. This is a book that should be seen by anyone with an interest in geology, protozoa or evolution.

Martin Brasier

Martin Brasier is lecturer in geology at the University of Hull.

Wiley

Appropriate or Underdeveloped Technology?

by Arghiri Emmanuel, University of Paris

A controversial book on technology transfer marks the beginning of the new Wiley/IRM Series on Multinationals.

So-called "appropriate" technology, tailor-made to fit local backward conditions of developing countries, merely widens the gap between the developed and the underdeveloped world, according to Arghiri Emmanuel in his latest book.

Emphasising the importance of the amount of goods produced rather than the number of jobs created, the author argues the benefits of modern capital-intensive technology in the developing world. Multinationals, he believes, often in the forefront in advanced technology, are in the privileged position of taking technological shortcuts for underdeveloped countries.

This provocative book questions many of the established views on technology transfer and on the role of multinationals in the Third World.

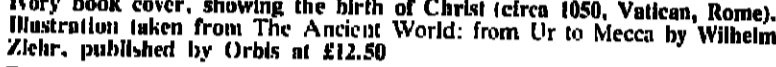
Wiley/IRM Series on Multinationals

September 1982 192 pages 0471 10467 1 \$26.00/£11.00

John Wiley & Sons Limited

Baffins Lane, Chichester, Sussex PO19 1UD, England

Rogers is a little naive in so heavily restricting his definition of ex-



In higher education the usual r

Student learning is placed firmly in the total social context of a campus, university and is seen to depend on that context in interaction with personally and maturational factors, as much as on the student's ability and previous knowledge. Wright describes the initial disorientation of the first-year student, living away from home for the first time, and unprepared by schooling for the social and emotional demands that this new experience brings.

Recent research has shown that a surprisingly large number of young children present behaviour problems sufficiently marked as to cause concern to their parents or other caretakers, most of whom hesitate to seek professional advice, perhaps because they are unwilling to confess an inability to handle children of tender years. Those who do attempt to obtain outside help are commonly told that they are worrying unduly.

Maurice Chazan
Maurice Chazan is professor of education at the University College of Swansea.

Open University
December

Saturday December 1

8:00-9:00 Communit Decisions: Serve You R
Prog 41

9:00-10:00 Self-Help Projects
Prog 42

10:00-11:00 The First Years of Life: Clash! (P
University Foundation Course: F
English, 1101; prog 1).

11:00-12:00 Survival

between the meaning of
communication, the Arts and the mas
M.A. in Education (Education and E
one year full-time course aimed at

Education Office, Education Building, University of Sussex, Falmer, Brighton BN1 9RQ or telephone 0273-606785, extension 828.

Saturday December 11

11.00 The 'Cockney Report: Mathematics
Where Do We Go From Here?

RADIO 5 (W9)
6.05 Technology Foundation Course: Vs
Pro

7.15 The First Years of Life: As The
T

7.38 Health Choices: Making It Better
4)

Thursday December 1

are invited to teach and perform at the annual conference of the Association of Directors of Music of Arts and Music in the United Kingdom. The Association is a leading body in the field of Music in the United Kingdom. The Association is a leading body in the field of Music in the United Kingdom.

**for
January 1983**

**Jan 21
Business and Technical
Education**

**Jan 28
Microfilm Publishing**

CLASSIFIED ADVERTISEMENTS

The Times Higher Education Supplement

To place advertisements write to or telephone:

The Advertisement Manager,
The Times Higher Education Supplement,
Priory House, St John's Lane, London EC1M 4BX.
Tel: 253 3000. Telex 264971

Rates:

Classified Display - £9.50 psc
Min. size: 9cm x 1 col @ £85.50
Classified Linage - £1.85 per line
Minimum 3 lines @ £5.55
Box number - £2.00

Copy deadlines:

Classified Display:
Friday in the week prior to publication
Classified Linage:
Monday 10.00 am in the week of publication

Universities

THE CHINESE UNIVERSITY OF HONG KONG
Department of Journalism and Communication

Applications are invited for the following post tenable from August, 1983:

Lecturer (Journalism and Communication)

To teach courses in communication theories, research methods, public opinion, and advanced reporting. Additional qualifications in advertising or communication policy and planning are preferred though not required. Applicants should have a doctoral degree, preferably a Ph.D. in communication or related fields. Knowledge of Chinese will be an advantage. Media experience is preferred.

Annual Salary: HK\$120,040-147,320 by 2 increments BAR
HK\$158,120-217,380 by 7 increments
Exchange rate approximately US\$1=HK\$6.6,
£1=HK\$10.7

Starting salary will depend on qualifications and work experience.

Conditions of Service: Benefits include vacation leave, long leave with pay, superannuation (apportioned 6%, University 10%, medical and dental benefits, education allowance for children, housing allowance (for those whose annual salary is HK\$138,000 or above) and, for dependents on overseas terms, passage benefits for themselves and for dependents on work.

Application Procedure: Applications should be made out in duplicate, giving full particulars, experience and the names and addresses of 3 persons to whom references may be made, and sent together with copies of certificates/diplomas/testimonials and recent publications, to the Personnel Section, The Chinese University of Hong Kong, Shatin, N.T. Hong Kong not later than February 15, 1983. Please mark "Recruitment" on cover.

UNIVERSITY OF EAST ANGLIA
NorwichCHAIR IN
EUROPEAN HISTORY

Applications are invited for the Chair in European History in the School of Modern Languages and European History, to succeed Professor W. E. Brown who retires in 20 September 1983. The successful candidate will have a distinguished record of research and scholarship in one or more areas of European History. Appointment will be at an appropriate point on the Professional scale, £21,500 to £26,000 and will be tenable from 1 October 1983. Applications (one copy only), giving full particulars of age, qualifications and experience, together with the names and addresses of three persons to whom references may be made, should be lodged with the Registrar and Secretary, University of East Anglia, Norwich NR4 7J (Telephone 0603 86161, ext. 2208), from whom further information may be obtained, not later than 25 January 1983. No forms of application are issued.

Southampton
THE UNIVERSITYTemporary
Lectureship
in History

Applications are invited for a temporary lectureship for two years in the post-bellum History of the USA, to commence on 1 September 1983. The initial salary will be within the range of £6,375 to £8,085 (on the salary scale £6,375-£14,508) depending on age, qualifications and experience. Further particulars may be obtained from Mrs E. C. P. Seers, Staffing Department, The University, Southampton, SO9 5NH to whom applications should be sent quoting reference 2521/L by 21 January 1983.

UNIVERSITY OF LONDON

Director of Central Library Services
and Goldsmiths' Librarian

The present Director, Mr D. J. Foskett, will retire at the end of the current session. The University wishes to appoint a successor in this senior post, which combines the duties of Director of the University Library and Goldsmiths' Librarian with duties relating to the coordination of library resources throughout the federal University. The post will be within Grade IV of the National Salary Structure for Senior Library Staff. Applicants should have substantial experience at a senior level of the management of library resources, which must include familiarity with modern methods of information technology. Applications, including a curriculum vitae and the names of three referees, should be made by letter to the Personnel Officer, University of London, Senate House, Malet Street, London WC1E 7HU, by 14 January 1983. Further information on this appointment may be obtained by writing to the Personnel Officer or by telephoning 01-436 9030, Ext. 3248.

Appointments

Universities
Fellowships
Research and
Studentships
Polytechnics
Colleges of
Higher Education
Colleges with
Teacher Education
Colleges and
Institutes of Technology

Technical Colleges
Colleges of
Further Education
Colleges and
Departments of Art
Administration
Overseas
Adult Education
Librarians
General Vacancies
Industry and Commerce

Other classifications

Exhibitions
Awards
Conferences and Seminars
Courses

Personal
For Sale and Wanted
Holidays and
Accommodation

DIOCESE OF BLACKBURN

There will be a vacancy at Easter 1983 for a

CHAPLAIN TO THE UNIVERSITY
OF LANCASTER

An Anglican priest will be appointed to work with ecumenical colleagues in an Inter-Faith Chaplaincy Centre on the University Campus. A job description and application forms may be obtained from the Bishop of Blackburn, Bishop's House, Ribchester Road, Blackburn BB1 8EP. Closing date for applications: 31 December, 1982.

UNIVERSITY OF REGINA
Invites application from and/or nomination
of candidates qualified for the position of
DEAN OF EDUCATION

The University of Regina is conducting a search for an accomplished academic and administrative leader to replace its present Dean of Education. The position will entail overall responsibility for the academic and academic work of the Faculty of Education. The Dean will be the chief executive officer of the Faculty. It is planned to fill this position by July 1, 1983.

Further enquiries or nominations should be directed, by January 10, 1983, to: Regina, Saskatchewan S4S 0A2. In accordance with Canadian Immigration requirements this advertisement is directed to Canadian citizens and permanent residents.

University of
the South Pacific
Applications are invited
for the post of
LECTURER IN
CHEMISTRY
(25254)

Applicants should normally hold a Ph.D. degree in Chemistry and have research experience in the field. The successful candidate will be expected to take up the appointment in 1984. Salary will be in accordance with the University's scale for Lecturers. Further particulars may be obtained from the Registrar, University of the South Pacific, P.O. Box 11, Suva, Fiji.

The University has a small number of positions within its establishment. The successful candidate will be expected to take up the appointment in 1984. Salary will be in accordance with the University's scale for Lecturers. Further particulars may be obtained from the Registrar, University of the South Pacific, P.O. Box 11, Suva, Fiji.

Gratuity appointment allowance is available for those appointed from outside the University. Further particulars may be obtained from the Registrar, University of the South Pacific, P.O. Box 11, Suva, Fiji.

Applications should be sent to the Registrar, University of the South Pacific, P.O. Box 11, Suva, Fiji.

Further particulars may be obtained from the Registrar, University of the South Pacific, P.O. Box 11, Suva, Fiji.

Applications should be sent to the Registrar, University of the South Pacific, P.O. Box 11, Suva, Fiji.

Further particulars may be obtained from the Registrar, University of the South Pacific, P.O. Box 11, Suva, Fiji.

Applications should be sent to the Registrar, University of the South Pacific, P.O. Box 11, Suva, Fiji.

Further particulars may be obtained from the Registrar, University of the South Pacific, P.O. Box 11, Suva, Fiji.

The Open University
TEMPORARY
LECTURESHIPS IN
BIOLOGY

Applications are invited for a temporary lectureship in Biology for two years, to commence in 1984. The successful candidate will be expected to take up the appointment in 1984. Salary will be in accordance with the University's scale for Lecturers. Further particulars may be obtained from the Registrar, The Open University, Milton Keynes MK9 1QJ.

Applicants should normally hold a Ph.D. degree in Biology and have research experience in the field. The successful candidate will be expected to take up the appointment in 1984. Salary will be in accordance with the University's scale for Lecturers. Further particulars may be obtained from the Registrar, The Open University, Milton Keynes MK9 1QJ.

Gratuity appointment allowance is available for those appointed from outside the University. Further particulars may be obtained from the Registrar, The Open University, Milton Keynes MK9 1QJ.

Applications should be sent to the Registrar, The Open University, Milton Keynes MK9 1QJ.

Further particulars may be obtained from the Registrar, The Open University, Milton Keynes MK9 1QJ.

Applications should be sent to the Registrar, The Open University, Milton Keynes MK9 1QJ.

Further particulars may be obtained from the Registrar, The Open University, Milton Keynes MK9 1QJ.

Applications should be sent to the Registrar, The Open University, Milton Keynes MK9 1QJ.

Further particulars may be obtained from the Registrar, The Open University, Milton Keynes MK9 1QJ.

Applications should be sent to the Registrar, The Open University, Milton Keynes MK9 1QJ.

Further particulars may be obtained from the Registrar, The Open University, Milton Keynes MK9 1QJ.

Imperial College of
Science and
Technology
Department of Mechanical
EngineeringRESEARCH
ASSISTANT IN
MANUFACTURING
TECHNOLOGY

Required for an SERC funded project on the development of manufacturing technology. The successful candidate will be expected to take up the appointment in 1984. Salary will be in accordance with the University's scale for Research Assistants. Further particulars may be obtained from the Registrar, Imperial College of Science and Technology, London SW7 2BX.

Applicants should normally hold a Ph.D. degree in Mechanical Engineering and have research experience in the field. The successful candidate will be expected to take up the appointment in 1984. Salary will be in accordance with the University's scale for Research Assistants. Further particulars may be obtained from the Registrar, Imperial College of Science and Technology, London SW7 2BX.

Gratuity appointment allowance is available for those appointed from outside the University. Further particulars may be obtained from the Registrar, Imperial College of Science and Technology, London SW7 2BX.

Applications should be sent to the Registrar, Imperial College of Science and Technology, London SW7 2BX.

Further particulars may be obtained from the Registrar, Imperial College of Science and Technology, London SW7 2BX.

Applications should be sent to the Registrar, Imperial College of Science and Technology, London SW7 2BX.

Further particulars may be obtained from the Registrar, Imperial College of Science and Technology, London SW7 2BX.

Applications should be sent to the Registrar, Imperial College of Science and Technology, London SW7 2BX.

Further particulars may be obtained from the Registrar, Imperial College of Science and Technology, London SW7 2BX.

Applications should be sent to the Registrar, Imperial College of Science and Technology, London SW7 2BX.

Further particulars may be obtained from the Registrar, Imperial College of Science and Technology, London SW7 2BX.

Applications should be sent to the Registrar, Imperial College of Science and Technology, London SW7 2BX.

Further particulars may be obtained from the Registrar, Imperial College of Science and Technology, London SW7 2BX.

Applications should be sent to the Registrar, Imperial College of Science and Technology, London SW7 2BX.

Further particulars may be obtained from the Registrar, Imperial College of Science and Technology, London SW7 2BX.

Applications should be sent to the Registrar, Imperial College of Science and Technology, London SW7 2BX.

Further particulars may be obtained from the Registrar, Imperial College of Science and Technology, London SW7 2BX.

Applications should be sent to the Registrar, Imperial College of Science and Technology, London SW7 2BX.

Further particulars may be obtained from the Registrar, Imperial College of Science and Technology, London SW7 2BX.

Applications should be sent to the Registrar, Imperial College of Science and Technology, London SW7 2BX.

University College
of Swansea
Applications are invited
for the post of
LECTURER
IN GEOGRAPHY

The successful applicant will be expected to take up the appointment in 1984. Salary will be in accordance with the University's scale for Lecturers. Further particulars may be obtained from the Registrar, University College of Swansea, Swansea SA1 8BA.

Applicants should normally hold a Ph.D. degree in Geography and have research experience in the field. The successful candidate will be expected to take up the appointment in 1984. Salary will be in accordance with the University's scale for Lecturers. Further particulars may be obtained from the Registrar, University College of Swansea, Swansea SA1 8BA.

Gratuity appointment allowance is available for those appointed from outside the University. Further particulars may be obtained from the Registrar, University College of Swansea, Swansea SA1 8BA.

Applications should be sent to the Registrar, University College of Swansea, Swansea SA1 8BA.

Further particulars may be obtained from the Registrar, University College of Swansea, Swansea SA1 8BA.

Applications should be sent to the Registrar, University College of Swansea, Swansea SA1 8BA.

Further particulars may be obtained from the Registrar, University College of Swansea, Swansea SA1 8BA.

Applications should be sent to the Registrar, University College of Swansea, Swansea SA1 8BA.

Further particulars may be obtained from the Registrar, University College of Swansea, Swansea SA1 8BA.

Applications should be sent to the Registrar, University College of Swansea, Swansea SA1 8BA.

Further particulars may be obtained from the Registrar, University College of Swansea, Swansea SA1 8BA.

Applications should be sent to the Registrar, University College of Swansea, Swansea SA1 8BA.

Further particulars may be obtained from the Registrar, University College of Swansea, Swansea SA1 8BA.

Applications should be sent to the Registrar, University College of Swansea, Swansea SA1 8BA.

Further particulars may be obtained from the Registrar, University College of Swansea, Swansea SA1 8BA.

Applications should be sent to the Registrar, University College of Swansea, Swansea SA1 8BA.

Further particulars may be obtained from the Registrar, University College of Swansea, Swansea SA1 8BA.

Applications should be sent to the Registrar, University College of Swansea, Swansea SA1 8BA.

Further particulars may be obtained from the Registrar, University College of Swansea, Swansea SA1 8BA.

Applications should be sent to the Registrar, University College of Swansea, Swansea SA1 8BA.

Further particulars may be obtained from the Registrar, University College of Swansea, Swansea SA1 8BA.

Universities continued

University College
at BuckinghamLECTURER IN
ENGLISH AS A
FOREIGN LANGUAGE

Applications are invited for the post of Lecturer in English as a Foreign Language. The successful candidate will be expected to take up the appointment in 1984. Salary will be in accordance with the University's scale for Lecturers. Further particulars may be obtained from the Registrar, University College at Buckingham, Buckingham MK18 1EG. Tel: 0295 411111.

Applicants should normally hold a Ph.D. degree in English and have research experience in the field. The successful candidate will be expected to take up the appointment in 1984. Salary will be in accordance with the University's scale for Lecturers. Further particulars may be obtained from the Registrar, University College at Buckingham, Buckingham MK18 1EG. Tel: 0295 411111.

Gratuity appointment allowance is available for those appointed from outside the University. Further particulars may be obtained from the Registrar, University College at Buckingham, Buckingham MK18 1EG. Tel: 0295 411111.

Applications should be sent to the Registrar, University College at Buckingham, Buckingham MK18 1EG. Tel: 0295 411111.

Further particulars may be obtained from the Registrar, University College at Buckingham, Buckingham MK18 1EG. Tel: 0295 411111.

Applications should be sent to the Registrar, University College at Buckingham, Buckingham MK18 1EG. Tel: 0295 411111.

Further particulars may be obtained from the Registrar, University College at Buckingham, Buckingham MK18 1EG. Tel: 0295 411111.

Applications should be sent to the Registrar, University College at Buckingham, Buckingham MK18 1EG. Tel: 0295 411111.

Further particulars may be obtained from the Registrar, University College at Buckingham, Buckingham MK18 1EG. Tel: 0295 411111.

Applications should be sent to the Registrar, University College at Buckingham, Buckingham MK18 1EG. Tel: 0295 411111.

Further particulars may be obtained from the Registrar, University College at Buckingham, Buckingham MK18 1EG. Tel: 0295 411111.

Applications should be sent to the Registrar, University College at Buckingham, Buckingham MK18 1EG. Tel: 0295 411111.

Further particulars may be obtained from the Registrar, University College at Buckingham, Buckingham MK18 1EG. Tel: 0295 411111.

Applications should be sent to the Registrar, University College at Buckingham, Buckingham MK18 1EG. Tel: 0295 411111.

Further particulars may be obtained from the Registrar, University College at Buckingham, Buckingham MK18 1EG. Tel: 0295 411111.

Applications should be sent to the Registrar, University College at Buckingham, Buckingham MK18 1EG. Tel: 0295 411111.

Further particulars may be obtained from the Registrar, University College at Buckingham, Buckingham MK18 1EG. Tel: 0295 411111.

Applications should be sent to the Registrar, University College at Buckingham, Buckingham MK18 1EG. Tel: 0295 411111.

Further particulars may be obtained from the Registrar, University College at Buckingham, Buckingham MK18 1EG. Tel: 0295 411111.

Applications should be sent to the Registrar, University College at Buckingham, Buckingham MK18 1EG. Tel: 0295 411111.

Further particulars may be obtained from the Registrar, University College at Buckingham, Buckingham MK18 1EG. Tel: 0295 411111.

Applications should be sent to the Registrar, University College at Buckingham, Buckingham MK18 1EG. Tel: 0295 411111.

Further particulars may be obtained from the Registrar, University College at Buckingham, Buckingham MK18 1EG. Tel: 0295 411111.

Applications should be sent to the Registrar, University College at Buckingham, Buckingham MK18 1EG. Tel: 0295 411111.

Further particulars may be obtained from the Registrar, University College at Buckingham, Buckingham MK18 1EG. Tel: 0295 411111.

Applications should be sent to the Registrar, University College at Buckingham, Buckingham MK18 1EG. Tel: 0295 411111.

University of
Cambridge
Faculty of Modern and
Medieval Languages
UNIVERSITY
LECTURER or
UNIVERSITY
ASSISTANT
LECTURER

Applications are invited for the post of Lecturer or University Assistant Lecturer in the Faculty of Modern and Medieval Languages. The successful candidate will be expected to take up the appointment in 1984. Salary will be in accordance with the University's scale for Lecturers. Further particulars may be obtained from the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Applicants should normally hold a Ph.D. degree in the subject and have research experience in the field. The successful candidate will be expected to take up the appointment in 1984. Salary will be in accordance with the University's scale for Lecturers. Further particulars may be obtained from the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Gratuity appointment allowance is available for those appointed from outside the University. Further particulars may be obtained from the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Applications should be sent to the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Further particulars may be obtained from the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Applications should be sent to the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Further particulars may be obtained from the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Applications should be sent to the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Further particulars may be obtained from the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Applications should be sent to the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Further particulars may be obtained from the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Applications should be sent to the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Further particulars may be obtained from the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Applications should be sent to the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Further particulars may be obtained from the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Applications should be sent to the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Further particulars may be obtained from the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Applications should be sent to the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Further particulars may be obtained from the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Applications should be sent to the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Further particulars may be obtained from the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Applications should be sent to the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Further particulars may be obtained from the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Applications should be sent to the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Further particulars may be obtained from the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Applications should be sent to the Registrar, University of Cambridge, Cambridge CB2 3RQ.



Applications are invited for the post of Lecturer in English as a Foreign Language. The successful candidate will be expected to take up the appointment in 1984. Salary will be in accordance with the University's scale for Lecturers. Further particulars may be obtained from the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Applicants should normally hold a Ph.D. degree in the subject and have research experience in the field. The successful candidate will be expected to take up the appointment in 1984. Salary will be in accordance with the University's scale for Lecturers. Further particulars may be obtained from the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Gratuity appointment allowance is available for those appointed from outside the University. Further particulars may be obtained from the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Applications should be sent to the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Further particulars may be obtained from the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Applications should be sent to the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Further particulars may be obtained from the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Applications should be sent to the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Further particulars may be obtained from the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Applications should be sent to the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Further particulars may be obtained from the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Applications should be sent to the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Further particulars may be obtained from the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Applications should be sent to the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Further particulars may be obtained from the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Applications should be sent to the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Further particulars may be obtained from the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Applications should be sent to the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Further particulars may be obtained from the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Applications should be sent to the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Further particulars may be obtained from the Registrar, University of Cambridge, Cambridge CB2 3RQ.

Colleges of Higher Education continued

Tasmanian College of Advanced Education

HEAD OF SCHOOL OF ART

(Ref. No. 13482)

The Tasmanian College of Advanced Education is a multidisciplinary college situated in Launceston (pop. 84,000 in the Greater Launceston area) on the Tamar river. Degree or Diploma level studies are offered in Administration, Applied Science, Art, Education, Engineering, Environmental Design, General Studies, Music, Nursing and Social Work. Current enrolments are in excess of 2,100 and this is expected to rise to 2,500 by 1984.

Applications are invited for the position of Head of the School of Art. The School currently offers teaching programmes in 2-D and 3-D Studies, Fibres and Fabrics, Ceramics, Printmaking, Jewellery and Silversmithing. A new programme in Applied Design (Wood) is currently being developed and will be initiated, with strong State Government support, in 1983.

The successful applicant should have experience in arts administration, and possess relevant tertiary qualifications, teaching and professional experience. It is envisaged that the appointee will have some teaching responsibilities in one of the following areas: Drawing, Applied Design or Basic Design Studies.

Level of appointment and salary: Principal Lecturer III \$43,685 per annum; Senior Lecturer I \$32,936 per annum to \$43,685 per annum.

Enquiries of an academic/professional nature should be directed to the Principal, Dr C. A. O'Flaherty (Tel: (033) 26 0631), in the College.

In the academic administrative structure of the College, Schools are grouped into Divisions. Heads of Divisions are normally appointed from the Heads of Schools and the appointee to this position will therefore be eligible for such higher appointment.

Applications quoting the above reference number, and including the names and addresses of three referees should be forwarded to: The Registrar, Tasmanian College of Advanced Education, PO Box 1214, Launceston, Tas. 7250, Australia. A copy should also be sent to the Association of Commonwealth Universities (Acps), 36 Gordon Square, London WC1H 0PF, from home further information is available.

Closing date: 4 January 1983.

Tasmanian College of Advanced Education

SCHOOL OF NURSING

The Tasmanian College of Advanced Education is a multidisciplinary college situated in Launceston (pop. 84,000 in the Greater Launceston area) on the Tamar river. Degree or Diploma level studies are offered in Administration, Applied Science, Art, Education, Engineering, Environmental Design, General Studies, Music, Nursing and Social Work. Current enrolments are in excess of 2,100 and this is expected to rise to 2,500 by 1984.

HEAD OF SCHOOL

(Ref. No. 13662)

Applications are invited for the position of Head of the recently established School of Nursing to assume responsibility of the position and the management of the current Head, Dr Basil Beakins. The School currently offers a Degree programme for experienced registered nurses and a Diploma programme for Basic Nursing. Both of these programmes commenced in 1982. The Head of School is responsible for the academic development and continual operations of these courses within the School.

The successful applicant will be a registered general nurse with appropriate professional experience at senior level and postgraduate academic qualifications. Experience in teaching and administration of a tertiary nursing programme is required. Salary: Principal Lecturer I - \$43,685 per annum.

LECTURER/SENIOR LECTURER

(Ref. No. 13662)

The successful applicant will be required to undertake appropriate teaching duties, assist the Head of School in the continuing development of the Degree programme for experienced nurses, and the Diploma programme for Basic Nursing, which commenced in 1982.

The appointee will be a registered general nurse, and desirably will also have appropriate postgraduate academic qualifications and teaching experience. Applicants should indicate the specialities in which they can teach, in addition to general nursing.

Salary: Lecturer II - \$42,430-\$42,548 per annum; Lecturer I - \$42,549-\$42,667 per annum; Senior Lecturer I - \$43,686-\$43,804 per annum.

Enquiries of an academic/professional nature should be directed to the Head of the Division of Community and Health Studies, Dr Ben Gelin (Tel: (033) 26 0284), in the College.

Further information is available from the Registrar. Applications, quoting the appropriate reference number, and including full personal and professional details and the names and addresses of three referees, should be forwarded to: The Registrar, Tasmanian College of Advanced Education, PO Box 1214, Launceston, Tas. 7250, Australia. A copy should also be sent to the Association of Commonwealth Universities (Acps), 36 Gordon Square, London WC1H 0PF, from home further information is also available.

Closing date: 4 January 1983.

SCHOOL OF INFORMATION STUDIES

Lecturer II/Senior Lecturer/
Principal Lecturer

The School of Information Studies has a vacancy for a lecturer able to lead an innovative, CNA validated, BA in Secretarial Studies degree and to make a major contribution towards determining the future direction of the work of the School.

Good academic qualifications in a relevant field of study are prerequisite but the ability to take a comprehensive view of the nature of secretarial studies and of developments in information technology is also essential.

A number of vacancies also exists for lecturers in Systems Analysis and Design, able to offer specialist knowledge in applications such as Information Systems Management, Databases, Communications Management and Networking.

LI £28,855 - £31,022
SL £31,023 - £31,984 (Bar) £32,816
PL £31,985 - £33,250 (Bar) £35,018

Application forms and further details can be obtained from:
The Personnel Office
Hull College of Higher Education
Ingcliffe Avenue, Hull HU8 7LU
Tel: (0482) 446500

Humberside College of Higher Education is formed by a merger of Hull College of Higher Education and certain advanced work of Grimsby College of Technology with effect from 1st January, 1983.

Closing date: 4th January, 1983.
Full and fair consideration will be given to all disabled applicants.

Humberside College of Higher Education

DIHE

RESEARCH ASSISTANTS

Applications are invited from suitably qualified Honorary Graduates for Research Assistants for the following projects:

1) DEPARTMENT OF BUSINESS STUDIES

"The Investment Behaviour of South Western Small (non Engineering) Firms 1983/5."

2) DEPARTMENT OF TECHNOLOGY

"A High Performance Computer-Aided Drafting Package Using Low-Cost Hardware."

Starting date: 1st January, 1983 or a.s.a.p. thereafter.

Salary £4,680 to £5,365.

Application forms and further details on receipt of a/c, from The Directors Secretary (ref TH11), Dorset Institute of Higher Education, Wallisdown Road, Poole, Dorset, BH12 5BB.

Closing date: 21st December, 1982.

Administration

Department of Education and Science

HM Inspectors of Schools

Further and Higher Education
Business and Management Studies
Computer Education

Applications are invited from men and women, preferably aged between 35 and 45, for appointment as HM Inspectors. HMIs provide a service of professional advice at the Department of Education and Science and normally carry out a general as well as a specialist assignment. Their work primarily involves inspecting and advising educational institutions, but also includes consulting with local education authorities and contributing to in-service training.

Vacancies exist for Inspectors specialising in: Business and Management Studies; Mathematics and Computing Studies. Applicants must have had considerable experience and responsibility in their specialist area and have an active interest in the application of education, industry and commerce. Appropriate academic qualifications, teaching and industrial/management experience essential.

Applicants must have had considerable experience and responsibility in their specialist area and have an active interest in the application of education, industry and commerce. Appropriate academic qualifications, teaching and industrial/management experience essential.

Application forms (to be returned by 14th January 1983) and further information may be obtained from Miss U. D. Church, Department of Education and Science, Room 19/17, Elizabeth House, 33 York Road, London SE1 7PH; telephone 01-923 8222, ext. 2257 or 2765. Please quote 7/82.

General Vacancies



Senior Editor German Dictionaries Department

Oxford University Press has a vacancy for a full-time Senior Editor for a new German-English Dictionary now in preparation at Oxford. The appointment is for a fixed term of eighteen months. A good Honours degree in German is essential, with at least one year's residence in a German-speaking country and previous lexicographical and translating experience; experience of teaching English to German native speakers and/or German to English speakers would be a distinct advantage.

Salary according to qualifications and experience on the scale £6,888 to £10,344.

Applications, with full curriculum vitae, should be submitted to J.D. Williams, Oxford University Press (Publishing), Walton Street, Oxford OX2 6DP, no later than 4 January 1983.

Oxford University Press

Miscellaneous

Clinical Research Associate

Become an expert in Medical Communications

The frontiers of medicine are constantly being extended, thanks to improved channels of communication. Here at Lederle Laboratories, the pharmaceutical division of the international Cynamid Organisation, there is ample evidence of our already significant contribution to the world of medicine.

As a result of promotion to our European Research Division, we now have a vacancy within our Medical Department for a Clinical Research Associate based in Manchester. Prime responsibility will be to communicate technical and clinical information about some of our key products to both individuals and large audiences of Specialists and Clinicians. Additional responsibility will include monitoring of clinical trials and commercial support for both our existing and new products.

Applicants should be aged 24+ and be able to demonstrate a high level of commercial awareness and technical expertise. A PhD is highly desirable; although exceptional first degree candidates with relevant experience will also be considered.

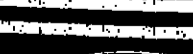
Applicants are sought from candidates throughout the U.K. who are prepared to base themselves in Manchester. Relocation expenses together with attractive terms of employment and a company car, will be offered.

Write or telephone for an application form to: Roger Loader, Personnel Officer, Cynamid of Great Britain Limited, Fareham Road, Gosport, Hants PO13 0AS, Telephone Fareham (0329) 236131 (between 8.30-4.30). Closing date for receipt of application form January 4th 1983.

Lederle Laboratories is a division of Cynamid of G.B. Limited.



Cynamid



Lederle

Miscellaneous continued

SCIENCE & EDUCATION CORRESPONDENT

BBC TELEVISION NEWS

BBC Television News is looking for a Correspondent to report and analyse stories in the fields of science and education. He or she will be expected to play a major part in all BBC Television News programmes, explaining clearly and simply, important stories across the whole area of science with particular emphasis on industrial and information technology and on research and development in the field of medicine. Candidates will be expected to have, or to acquire rapidly, detailed knowledge of education policy and practice so as to be able also to explain and interpret stories affecting all sectors of education.

Applicants will need to demonstrate first class journalistic ability, and should have substantial relevant experience. They must have a good screen presence, and may be required to undertake screen tests.

Salary £14,597 - £17,935 (according to qualifications and experience) plus an allowance of £828 p.a. Based West London.

Relocation expenses considered.

Contact us immediately for application form (quote ref 3717/THES and enclose a.s.c.) BBC appointments, London W1A AA. Tel: 01-580 3334.

We are an Equal Opportunities employer



Courses continued

University of Bradford

Postgraduate School of Studies in Social Analysis

Diploma and MSc by Advanced Study in RACE RELATIONS AND COMMUNITY STUDIES

The Diploma in Race Relations and Community Studies is a taught course designed to broaden understanding of social and community issues in a relevant field of study. It is available for two years or full-time for one year. The course builds on the student's experience and knowledge of race relations and community studies.

The MSc by Advanced Study in Race Relations and Community Studies is a research degree. It is available for two years or full-time for one year. The course builds on the student's experience and knowledge of race relations and community studies.

Applicants must have a PhD in a relevant field of study and a research proposal. The course is available for two years or full-time for one year. The course builds on the student's experience and knowledge of race relations and community studies.

Applicants must have a PhD in a relevant field of study and a research proposal. The course is available for two years or full-time for one year. The course builds on the student's experience and knowledge of race relations and community studies.

Applicants must have a PhD in a relevant field of study and a research proposal. The course is available for two years or full-time for one year. The course builds on the student's experience and knowledge of race relations and community studies.

Applicants must have a PhD in a relevant field of study and a research proposal. The course is available for two years or full-time for one year. The course builds on the student's experience and knowledge of race relations and community studies.

Applicants must have a PhD in a relevant field of study and a research proposal. The course is available for two years or full-time for one year. The course builds on the student's experience and knowledge of race relations and community studies.

Applicants must have a PhD in a relevant field of study and a research proposal. The course is available for two years or full-time for one year. The course builds on the student's experience and knowledge of race relations and community studies.

Applicants must have a PhD in a relevant field of study and a research proposal. The course is available for two years or full-time for one year. The course builds on the student's experience and knowledge of race relations and community studies.

Applicants must have a PhD in a relevant field of study and a research proposal. The course is available for two years or full-time for one year. The course builds on the student's experience and knowledge of race relations and community studies.

Applicants must have a PhD in a relevant field of study and a research proposal. The course is available for two years or full-time for one year. The course builds on the student's experience and knowledge of race relations and community studies.

Applicants must have a PhD in a relevant field of study and a research proposal. The course is available for two years or full-time for one year. The course builds on the student's experience and knowledge of race relations and community studies.

Applicants must have a PhD in a relevant field of study and a research proposal. The course is available for two years or full-time for one year. The course builds on the student's experience and knowledge of race relations and community studies.

Applicants must have a PhD in a relevant field of study and a research proposal. The course is available for two years or full-time for one year. The course builds on the student's experience and knowledge of race relations and community studies.

Applicants must have a PhD in a relevant field of study and a research proposal. The course is available for two years or full-time for one year. The course builds on the student's experience and knowledge of race relations and community studies.

Applicants must have a PhD in a relevant field of study and a research proposal. The course is available for two years or full-time for one year. The course builds on the student's experience and knowledge of race relations and community studies.

Applicants must have a PhD in a relevant field of study and a research proposal. The course is available for two years or full-time for one year. The course builds on the student's experience and knowledge of race relations and community studies.

Applicants must have a PhD in a relevant field of study and a research proposal. The course is available for two years or full-time for one year. The course builds on the student's experience and knowledge of race relations and community studies.

Applicants must have a PhD in a relevant field of study and a research proposal. The course is available for two years or full-time for one year. The course builds on the student's experience and knowledge of race relations and community studies.

Applicants must have a PhD in a relevant field of study and a research proposal. The course is available for two years or full-time for one year. The course builds on the student's experience and knowledge of race relations and community studies.

Applicants must have a PhD in a relevant field of study and a research proposal. The course is available for two years or full-time for one year. The course builds on the student's experience and knowledge of race relations and community studies.

Applicants must have a PhD in a relevant field of study and a research proposal. The course is available for two years or full-time for one year. The course builds on the student's experience and knowledge of race relations and community studies.

Overseas

UNIVERSITY OF TRANSKEI

Applications are invited from suitably qualified candidates regardless of sex, religion, race, colour or national origin for appointment to the post of:

a) CHAIR - GEOGRAPHY

Applicants must have a PhD. Experience in economic and physical geography will be a recommendation.

b) CHAIR - ANTHROPOLOGY

Applicants must have a PhD in social or cultural anthropology. Extensive teaching and research experience will be a recommendation.

c) SENIOR LECTURER - ECONOMICS

Applicants must have a Master's degree in Economics.

d) SENIOR LECTURER - ENGLISH LANGUAGE SKILLS

The successful applicant will be expected to determine needs and to design and teach courses in English Language usage. Applicants must be both qualified and experienced in teaching English as a second language.

Further information is obtainable from Head of the English Department.

SALARY SCALES

Chair: £28,109 x 936-24,046

Senior Lecturer: £16,557 x 936-24,046

Additional benefits include payment of removal of furniture and personal effects, assistance towards University education of children, accident insurance cover, study leave, leave gratuity on retirement and membership of Group Insurance, Pension and Medical Schemes.

Applications should be sent to the Personnel Officer, University of Transkei, Private Bag X5082, Umtata, Republic of Transkei.

Applicants must furnish three referees and a detailed curriculum vitae as well as full postal addresses of at least three (3) referees.

Applicants must furnish three referees and a detailed curriculum vitae as well as full postal addresses of at least three (3) referees.

Applicants must furnish three referees and a detailed curriculum vitae as well as full postal addresses of at least three (3) referees.

Applicants must furnish three referees and a detailed curriculum vitae as well as full postal addresses of at least three (3) referees.

Applicants must furnish three referees and a detailed curriculum vitae as well as full postal addresses of at least three (3) referees.

Applicants must furnish three referees and a detailed curriculum vitae as well as full postal addresses of at least three (3) referees.

Applicants must furnish three referees and a detailed curriculum vitae as well as full postal addresses of at least three (3) referees.

UNIVERSITY OF NATAL

Department of English

PIETERMARITZBURG

Applications are invited from suitably qualified persons regardless of sex, religion, race, colour or national origin for appointment to the post of:

LECTURER IN ENGLISH LITERATURE

The post will be available from 1st July, 1983, though it is recognized that it may be impossible for the successful applicant to assume duty on that date.

The salary will be in the range: R12,657-222 173 per annum.

The commencing salary notch will be dependent on the qualifications and/or experience of the successful candidate. In addition, an annual vacation savings bonus is payable, subject to Treasury regulations.

Application forms, further particulars of the post and information on pensions, medical aid, group insurance, staff bursary, housing loan and subsidy schemes, long leave conditions and travelling expenses are payable, are available from the Registrar, University of Natal, Pietermaritzburg, P.O. Box 1700, Pietermaritzburg, Natal 3200.

Applicants must have a Master's degree in English.

Applicants must have a Master's degree in English.

Applicants must have a Master's degree in English.

Applicants must have a Master's degree in English.

Applicants must have a Master's degree in English.

Applicants must have a Master's degree in English.

Applicants must have a Master's degree in English.

Applicants must have a Master's degree in English.

Applicants must have a Master's degree in English.

Applicants must have a Master's degree in English.

Applicants must have a Master's degree in English.

Applicants must have a Master's degree in English.

Applicants must have a Master's degree in English.

Applicants must have a Master's degree in English.

Applicants must have a Master's degree in English.

Applicants must have a Master's degree in English.

Applicants must have a Master's degree in English.

Head of Language Services

Saudi Arabia

c. £20,220 p.a. inc. tax free

Allied Medical Group are the British consultants to the Riyadh Al-Kharj Hospital Programme, which provides health care to the Armed Forces of Saudi Arabia and their families. The two hospitals which comprise the Programme are now and superbly equipped. Many of the professional staff are British but there are an increasing number of Saudi Arabian and other foreign Nationals now working in various capacities in the Programme. The working language is English and we need a Head of Language Services - to be based at the 800 bed Military Hospital in Riyadh - to provide an effective language training service to employees and dependants. You will be responsible for analysis of training needs; assisting with the formulation of language training policy and defining a framework in which teaching materials are designed and presented.

This is an increasingly important role within the programme and we seek a mature graduate with at least seven years experience - at least two of which should have been in a senior capacity - of teaching English or Arabic as a foreign language, MA (TEFL) or equivalent. Arabic qualifications and fluency in English are essential.

This post is offered on a two year married status renewable contract basis. Benefits are excellent and include: free fully furnished accommodation; four weeks leave for every six months service; free air fares (including leave flights) and extensive recreational and welfare facilities.

For full details, write quoting ref: RKH 318/T to: Malcolm Craig, Senior Personnel Officer, Allied Medical Group, 18 Grosvenor Gardens, London SW1W 0DZ. Alternatively, call our 24 hour answering service on 01-730 5339, quoting the reference number. All applications will be dealt with in the strictest confidence.

The Ontario Institute for Studies in Education

ASSISTANT OR ASSOCIATE PROFESSOR

An appointment is to be made in the area of research in sociology and anthropology in the Department of Education at the level of assistant or associate professor.

Applicants should have a doctorate and proven ability to work with a focus on such areas as the sociology of education, curriculum, as an organization, community, and school. Candidates should be qualified to teach graduate courses and to carry out research and field work in school systems. Candidates should be capable of advising both students and staff on research and professional practice.

The successful candidate will be expected to complement the existing research programme, including research in school, teacher education, and public issues in education. Research and teaching appointments to be made if appropriate.

The successful applicant will be expected to provide evidence of a high level of scholarship, recognized expertise in research and teaching, and a substantial academic contribution to the field.

Applications with curriculum vitae and at least three references should be sent to: Dr Michael Fullan, Assistant Professor, Ontario Institute for Studies in Education, University of Toronto, Ontario M5S 1A5, Canada. The deadline for applications is January 1st 1983.

University of California

Los Angeles

Graduate School of Architecture and Urban Planning

FACULTY POSITION - FALL 1983

The Graduate School of Architecture and Urban Planning at UCLA is a full-time, tenure-track position. The successful candidate will be expected to teach in the Department of Architecture and Urban Planning, and to carry out research and field work in school systems. Candidates should be capable of advising both students and staff on research and professional practice.

Applicants must have a PhD in a relevant field of study and a research proposal. The course is available for two years or full-time for one year. The course builds on the student's experience and knowledge of race relations and community studies.

Applicants must have a PhD in a relevant field of study and a research proposal. The course is available for two years or full-time for one year. The course builds on the student's experience and knowledge of race relations and community studies.

Applicants must have a PhD in a relevant field of study and a research proposal. The course is available for two years or full-time for one year. The course builds on the student's experience and knowledge of race relations and community studies.

Applicants must have a PhD in a relevant field of study and a research proposal. The course is available for two years or full-time for one year. The course builds on the student's experience and knowledge of race relations and community studies.

Applicants must have a PhD in a relevant field of study and a research proposal. The course is available for two years or full-time for one year. The course builds on the student's experience and knowledge of race relations and community studies.

Applicants must have a PhD in a relevant field of study and a research proposal. The course is available for two years or full-time for one year. The course builds on the student's experience and knowledge of race relations and community studies.

Applicants must have a PhD in a relevant field of study and a research proposal. The course is available for two years or full-time for one year. The course builds on the student's experience and knowledge of race relations and community studies.

Don's diary

Monday

Like most of my colleagues in education I try to keep Mondays free for research and indeed it's early enough in the term for my diary to present a clean page. But research is displaced into preparation for two seminars tomorrow and meetings with two research students. To avoid human contact, I leave my office for a thinly populated corner of the library. Other colleagues who are not safe at home simply won't answer knocks on their office doors. My preparation gets done.

In the evening, finish off Penelope Lively's new novel *After Nature* - *At* while Jean Stroud, my wife, attends a rare Labour Party meeting in the village hall.

Tuesday

Tuesday is "language, the arts and education" day because largely given over to teaching on this new MA course, LAE for short. I start off taking the full-time students through Grice's theory of conversational implication (Grice 1975), arguing that the theory of implication can do everything the concept of connotation does in semiotics (Barthes 1957, 1964) and better. Then eat my sandwiches (this year's economy measure while one of my four full-time research students gives me an article on functional specialization in the human cortex to read. After lunch attend a talk by a visiting speaker which the LAE students have been urged to attend. Then on to an open seminar where full and part-time LAE students come together. Today, Peter Abbs, who teaches the LAE courses with me, gives a formal paper on Edmund Gosse's *Father and Son*, as part of his course on autobiography. I'm prepared for this: I've been reading the books Peter uses in his LAE courses over the vacation. After a proper dinner in the refectory, repeat the Grice seminar with one group of our part-time LAE students while Peter teaches the other group.

Wednesday

Travel the 10 miles to work by bus today, which ensures that an article (Elser 1982) read which otherwise might not have been. Deal with my correspondents, as they say, and discuss the agenda for Friday's Postgraduate Certificate in Education meeting with the director of our PGCE course. Flurry to the library to read an article on meaning (Grice 1969) prior to meeting a visiting research student from Japan.

The large committee programme group which oversees our many MA in education courses meets at 2 with a large agenda of proposals for new courses, changes to old courses, and a joker under any other business (should teaching hours be allocated on a task or student number-related basis?) which ensures that we overrun.

In the evening at home read two articles in preparation for tomorrow's seminar: first, *After Nature* by Lively and *After Nature* by Stroud, which has just arrived through the New Left Review book club.

Thursday

Seminar on distributive justice (Rawls 1970) with my MA education and society students, arising from discussions of equality of opportunity in education and ending up on the edge of inheritance and the family. So next week we'll go on to Nozick's (1974) theory of justice ("From each as he chooses, to each as he is chosen"), guaranteed to polarize our intuitions and arguments as we consider whether Wilt Chamberlain the baseball player is entitled to every cent of the gate money his fans choose to pay him.

After this, an hour discussing Dennett on philosophy and artificial intelligence (Dennett 1979) with a newly-arrived Swedish research stu-

dent for whom I want to find a co-supervisor. I've come round to the view that co-supervision in giving research students access to more sources of advice and expertise is in general a good thing.

After lunch, I go into Brighton to buy and deliver a present to a five-year-old child who is back in hospital undergoing treatment for a congenitally dislocated hip, a condition she shares with my two-year-old daughter. They were in traction beside each other earlier this year, strung up for a fortnight prior to their first operations and encasement in immobilizing plasters. In that condition, the difference in their ages did not matter a jot. Having delivered tubes of glitter, glue and paper, dash back to the university to watch a video of a French television programme on Mitterrand.

In the evening, Jean is out at an evening class, and I spend a pleasant time playing with my daughter, Isabella, who having napped this afternoon is in no mood to go to bed. This leaves time for only a few pages of *The Anti-Social Family* before I turn in, anticipating a hard day.

Friday

Isabella is usually my alarm clock, but as she went to bed late last night, I set the mechanical alarm for 7 am and first up. I have two seminars this morning, one with each of the two groups of PGCE students to whom I am personal tutor. Ours is a school-based course, and these students are returning after an eight-day induction period in the schools where they will be teaching three days each week until Easter. I'm anxious to know if all has gone well, and am relieved that it has: everyone knows which classes they will be teaching when they go back to school after half-term, has observed these classes being taught, and has established a working relationship with their host-school's tutors. We discuss general issues arising from their observations in the induction period. One group gets stuck into the complexities of banding and setting in its school, and I prescribe *Bandwidth* (Ball 1981) to be read. This is how I relate "practice" and "theory".

Over sandwiches, check the agenda and papers for the PGCE programme group meeting I am to chair at 2pm. I expect a difficult meeting, and am not mistaken. For after an hour's largely uncontentious business, such as making a specific commitment to accept applications from some categories of disadvantaged students, we proceed to the main task of dividing the secondary PGCE places we have been allocated for 1983/84 between our existing curriculum groups. To boot, we have to formulate a response to the University Grants Committee indicating where, if at all, we could offer additional places without extra resources. It takes two hours to divide our cake, and decide to ask for just a little bit more.

Foolishly, I had thought I might get to the early showing of *Fitzcarraldo* (which I wanted to see home, then back to Brighton on the late show) which has just arrived through the New Left Review book club.

Saturday and Sunday

"Beware of domesticity," says *The Anti-Social Family*. I did in the summer vacation, when I was forcing my daughter to completion, but now weekends are home-based, and I enjoy the company of my daughter. On a country walk and a visit to the zoo, while Jean gets on with wallpapering. Sunday evening we go out to dinner together while Isabella is babyst. It's hardly a progressive way of life, I'm afraid.

Trevor Pateman

The author is a lecturer in the education area at the University of Sussex.

On the wrong side of the binary tracks



Patrick Nutgens

budget for equipment for the polytechnic is £100,000. Looking at the figures we recognized that the differences were so great.

What gave us pause even more was the sobering recognition that the capital equipment grant for the university's social studies faculty, for 1981/82, was £105,800 - which is more than that for the whole of the polytechnic. I have no doubt that social studies nowadays require a lot of equipment but it cannot possibly be logical that they should buy more equipment than a whole polytechnic, with its engineering and electronics and medical laboratory subjects and physical education and art and architecture. So we thought it would be instructive to compare some costs in two of the areas where we do overlap - that is, in engineering.

And very interesting they are too. Keeping the numbers simple and round so that I can understand them myself, I find that the situation in electrical engineering (comparing full-time university students with full-time equivalent polytechnic students) is like this. The university department has slightly more students (299 compared 274) and slightly fewer academic staff (26.5 compared with 29). But then the gap widens. The university has 27 technicians and the polytechnic has 7. The university department has a budget of £48,000 to the polytechnic's £27,000. It must be for research, about which more in a moment.

In case electrical engineering should be a special case, we looked at mechanical engineering, where the university has 310 students and the

polytechnic 320. The university has 33 academic staff to the polytechnic's 30, no less than 33 technicians to the polytechnic's 9 (yes 9) and 7 administrators to the polytechnic's 2. So it is not surprising that for their own running costs the university has to spend nearly £51,000 and the polytechnic only £26,000.

I don't myself resent the fact that there are differences, even if some of the polytechnic staff may feel more strongly about the state of affairs than I do. But I do think that the differences need explanation. Both of these university departments are very good ones; the polytechnic schools have some way to go but are getting stronger with every year and have a good record for employment prospects at the end. The major difference that any university teacher will point out is the fact that the university is carrying out research. It is of course a myth that the polytechnic is not; just try to get a degree approved by the Council for National Academic Awards without doing any. Even if the difference is a teaching institution whereas the university, in the happy phrase of the late vice chancellor, carries out "teaching in an atmosphere of research", I do wonder that else a polytechnic could possibly be doing it. It has to promote degrees. Nor is it at all clear to me that all university staff spend so much time on research, whatever it might be.

But none of that accounts for the major glaring differences in the support services for teaching. Leeds City has always been stingy about administrators and technicians, which may be a healthy thing in regard to one group but is absurdly short-sighted (and odd for an industrial city) as regards the other. It means that many academics are carrying out tasks that should be done by the technicians and administrators. I may of course be that Leeds is unusually badly treated. I found in Australia that Leeds University's proportion of support staff to academic staff is everywhere regarded as the normal one, whereas the polytechnic is, frankly, laughable. Yet Leeds Polytechnic is one of the better and more efficiently run polytechnics. There must be a moral somewhere.

In that context, here is an interesting simple comparison. The department of economics in the university has 40 teaching staff and 11 administrators. The school of accounting and applied economics in the polytechnic, which is a large and busy outfit, has 70 academic staff and 3.5 administrators - 1 in 20 as compared with 1 in 4. It is not surprising that during the summer months when telephone enquiries are pouring in all the time the place gets choked up and gives an impression of inefficiency.

What an admirable man is Laurie Taylor who reminds us about reality. But privatization is not just a matter of contracting out to big business. Services can also be "contracted out" to volunteer and neighbourhood groups, to charities and non-profit-making bodies. What is fostering if it is not contracting out? If it is unfortunate indeed if privatization becomes the type of political football that comprehensive schools became - a political litmus test.

Not of course that Sir Keith's version of a loan scheme can be regarded as privatization. It will be publicly financed and government operated.

The details now look like being announced early in the new year. At least the main outlines will be set out, with possible variations on some aspects, such as whether interest rates should be subsidized and at what level of earnings repayments might be deferred. Depending on the reaction, there is almost certainly going to be a manifesto commitment.

For despite all this, the fact that the age group is at its peak, the highest proportion ever of 18-year-olds entered higher education last year. With a few exceptions the universities heeded the UGC and reduced their entry; but the polytechnics and the local authority colleges boosted their numbers and so confounded the educational forecasters. No doubt ambivalence reigns at the DES. Increasing the age participation rate will be a triumph to some, but financially it is also an embarrassment.

Privatize: a buzz not a bogey



Keith Hampson

How hard does the "think tank" think its conclusions in that highly state-look more like dubious extrapolations of past trends than the product of great original thought.

The spiralling cost of the public sector over the past few decades relates directly to unfavourable demographic factors. But these will shortly be much kinder. There may never again be as many children in Britain as there were in the 1970s. Even the

pensioner boom will slow dramatically in the next two decades. With falling interest rates the cost of government debt will fall. And if Sir Geoffrey Howe is right and economic growth revives the cost of unemployment will be a diminishing burden. No doubt too, in the longer term wages will grow and there will be no need for astronomically high tax rates with which the chancellor has been trying to frighten his colleagues.

But while there is no case for some of the more extreme proposals of the "think tank" there is no reason why we should not encourage innovations that will result in a greater commitment to lower costs, higher efficiency and more flexibility.

That is why privatization is so important. To the left it may look like an attack on the public sector - there always was a poverty of new thinking on the right. But there is plenty of empirical evidence - especially in the United States and Japan - that productivity and performance can be improved and better value for money achieved by "contracting out" private/public services.

Sadly the word "privatize" is not just a peculiarly unattractive word, it now produces knee-jerk reactions from the Labour Party. A "buzz" word has become a bogey word. At a student meeting the other week I heard a student clearly regarded his charge that "privatization" means "the privatization of higher education" as the most disgusting accusation he could make.

LETTERS TO THE EDITOR

THES survey of academic opinion

Sir - The results of your four-subject survey (THES, December 3) are well beyond a smugshot of the opinion. However, academics are, or were, highly mobile. If one takes Newcastle upon Tyne - and it is possibly true of many universities - the academic staff who are Georgies by origin will be a small proportion of the staff. And of these Georgies some will not have got their first and higher degrees from other universities further afield.

It would be interesting to know how those who made up the 30 per cent of respondents to your questions viewed their degrees and which institutions they named as the "best". There is also a possible correlation between the tendency of graduates from certain institutions to go for teaching as a career, and the opportunities available 20-30 years ago to men to follow higher degrees at their own institutions or at those best known or endowed at that time to the postgraduate and research facilities in London, Oxford and Cambridge, *prima facie*, probably known them account for a high percentage of all current senior staff in almost every university in England and Wales, if not Scotland.

If this general thesis is valid then the kind of the questions asked "in this department" would you most

Importance of Aston struggle

Sir - You argue, in your editorial "the battle for tenure" (THES November 26) that the coming struggle at Aston is not very important. You suggest that the improvement in the financial picture in early November, and the other means of weakening security of tenure (like the "new blood" scheme) at the disposal of university managements, make inflammatory compulsory redundancies elsewhere unlikely.

It seems that you, too, have been lulled into a false sense of security by the phoney war during the last 15 months. The results of stringent freezes and looming deficits for 1983/4 are making many university administrators glad that the legality of tenure is now likely to be tested. It is clearly not sufficient to defend the universities by defending the concept of security of employment for those currently in post; we risk losing an entire intellectual cohort from our current postgraduates if we do not succeed in attracting more funds into higher education. But tenure is a necessary part of academic life, an insurance which allows individuals to risk making very long-term investments in non-marketable skills, and a protection of academic freedom from

as can assess the assessors. Yours faithfully, JOHN CANNON, Department of History, University of Newcastle upon Tyne.

Waldegrave speech

Sir - Mr Waldegrave's speech at Westfield College on November 17 raises a number of pertinent questions for the higher education in general and the university sector in particular. His analysis, however, is not without its weaknesses, and his hopes for radical change and innovation are quite unjustified within the institutional constraints which at present obtain.

First his remarks about demography as an external factor are quite irrelevant to the main point of issue. Even if the demographic trend is declining, it is still essential that the number of students undergoing training appropriate to the industrial and technological basis of our society be increased, in absolute terms. Such a training needs to educate for capability in the theory, practice and application of both useful technologies and services.

Second, his observations on resource constraints miss a vital connection. The economy is conceived in purely fiscal terms, but at its root the operation of that economy is based on technology, in a broad sense, and its management in a properly-appraised social and environmental milieu. In other words a fiscal recovery and the availability of more finance for higher education will mean nothing in itself, if it is not preceded, or at least accompanied, by the tackling of the fundamental technological and educational problems which are constraining the operation of the fiscal dimensions of economic performance.

It will be disastrous if solutions to these basic problems are made dependent upon the long-awaited but still invisible end to the economic recession. If money for higher education is in short supply then it is all the more necessary for government to ensure that what is available is allocated in relation to real priorities in relation to the long-overdue changes which are necessary in the structures and attitudes in tertiary education.

Furthermore, it seems clear that the UGC is constitutionally and collectively incapable of performing such a task. It cannot do values, nor foster the attitudes which it is undoubtedly admirable, to which it is committed, but which have already sapped the strength of the industrial and environmental base of Britain. Real innovation in any field, including education, always involves risks, and

will, for the first time in many years, have only one professor and a staff of ten, your explanation that this good rating "no doubt reflects the strength of social and economic history" was particularly welcome and encouraging on a chilly day in and even chillier economic climate.

It would be less than fair, however, if I did not write to remind you of our distinguished international history department (14 strong, four of them professors). I am sure that those concerned with this particular poll had them in mind too. Yours faithfully, T. C. BARKER, London School of Economics.

Sir - I am very glad that in your survey of academic opinion you made the point that the article was intended to start a public debate and that private views of performance are "more insidious" than public ones because "they cannot be effectively challenged." These are lofty sentiments and do you credit. You will now, of course, print the names of the 18 historians who returned "usable replies" so that the rest of us can assess the assessors. Yours faithfully, JOHN CANNON, Department of History, University of Newcastle upon Tyne.

these the UGC is not prepared to take. It clearly prefers to preserve the established patterns of the past. It is therefore unlikely that Mr Waldegrave's optimism, albeit somewhat guarded, concerning the UGC's capability to effect innovative change will be justified by the event.

Third, his vague use of the term "utilitarian" in contrast with "high quality scholarship", both begs the question and misses the point. The need is not for an appropriate appropriation of resources between these two areas of activity, but for the realistic recognition of the considerable diversity of activities embraced in the former and the determination of priorities within that very extensive sector. The mistake of the past has not been a failure to provide courses which are "utilitarian", but the devaluing of courses which concentrate on thinking, doing, and applying, and a quite disproportionate exaltation of those which concentrate largely on thinking.

Politicians must not be allowed to duck their own responsibilities and to push the responsibility for drastic restructuring back to "higher education itself". Individual universities can respond only by going back to the UGC with innovations and new ideas. But there is little evidence that the UGC is other than completely circumscribed by constitutional conservatism, and resolutely anchored to the ancient ways, which is perhaps not at all surprising in the light of its unrepresentative composition in relation to university education as a whole. It might be asked whether its members have any active appreciation of the character of higher education in some other industrial countries such as the Federal Republic of Germany.

The UGC is, however, appointed by the Secretary of State himself on the advice of the Department of Education and Science, so that the ultimate agent for change and response to innovation in higher education might be seen as Mr Waldegrave himself. Indeed, if innovation is needed then he has a unique role to play. Unless he does what needs to be done, then those of us, and not only in universities, who want to see significant changes, will remain effectively castrated as potential innovators.

Yours faithfully, R. P. MOSS, Pro Vice Chancellor, University of Salford.

APT on panel

Sir - In his review of the Association of Polytechnic Teachers' salary proposals (THES, December 3) David Jobbins gives the impression that the APT is excluded from the teachers' panel. May I respectfully

Salaries now includes the APT in the teachers' panel; a position which must have been agreed by all concerned in the discussions. Yours faithfully, GWYN IONES, 3 Birkdale Avenue, Pinner, Middlesex.

Keeping up democratic principles

Devising a credible salary policy for a trade union like the National Association of Teachers in Further and Higher Education, within an education system as incoherent as ours, and faced with this most obdurate and parsimonious of governments, has not been an easy task.

We are committed by our constitution to the full rigour of democratic participation and representation, and in the build up to the special salaries conference held last weekend, hundreds of branch meetings have been held to decide attitudes on policy.

Additionally, there have been meetings of our regional advisory committees and councils, national executive council working groups and sub-committees and finally the salaries conference itself. And underpinning this structure of debates and meetings the executive decided to launch a salaries memorandum to each member setting out the thinking behind the executive council's recommendations and providing a great deal of factual information about our relative salary position.

Of course no method exists whereby any association can force its membership to get involved on any issue, and in the salaries field there is under the Government the aura of fatalism and fear which has proved such an effective arm of its overall incomes policy.

But whatever the actual degree of participation by our membership we did at least make a real attempt at democracy.

Whatever is achieved in Burnham

natfhe

negotiations will depend upon us achieving unity in our ranks behind the salary policy now agreed. However while this is almost self-evident there is a threat to this unity as posed by the divisive activities of small breakaway bodies like the Association of Polytechnic Teachers.

Indeed the full logic of why it was that this Government placed them on the Burnham Committee can now be seen, since in seeking to distract attention from the overriding requirement to launch a vigorous and above all coordinated campaign within the TUC, they are playing precisely into the hands of central government.

But apart from this unhelpful distraction from the salaries campaign, there is another related sense of concern in the way such small single-section organizations can deliver their own so-called policies onto the backs of the rest of us.

Consider the comparative ease with which an organization like APT, with just over 3,000 members, and draws from only a number of the 30 polytechnics, is able to arrive at a position on salaries. Their role as a tiny sectarian group, with nothing like a real structure for participation and decision-making, enables them the comfort and luxury of oppositional "moan and groan" trade unionism.

For them there is no air of responsibility and above all, of accountability in what they propose, and hence no need to go through the slow processes of democracy which characterize Natfhe.

Salary claims, if they are to have the force of equity as well as justice, do not come easy, and Natfhe, which operates in the real world of industrial relations, can testify readily to that truth. We have now got a salaries policy and notwithstanding imitating tendencies to the contrary, we shall soon launch our agreed claim on behalf of all who work in the system, and we shall endeavour to secure it.

Frank Griffiths

The author is senior lecturer at Teesside Polytechnic and chairperson of the national advisory committee of Natfhe.